# Strikeout and Redline Copy

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## List of Figures



## List of Referenced Drawings



## Acronym Table

~~Safety-Kleen (Wichita), Inc. (SKW)~~ Clean Harbors Kansas, LLC (CHK)
United States Environmental Protection Agency (USEPA)
Resource Conservation and Recovery Act (RCRA)
Kansas Administrative Regulations (KAR)
Code of Federal Regulations (CFR)
Mean Sea Level (MSL)
National Oceanic and Atmospheric Administration (NOAA)
Average Daily Traffic (ADT)

## B-1 Introduction:

~~Safety-Kleen (Wichita), Inc.~~The Clean Harbors Kansas, LLC~~, a Kansas corporation, is a wholly owned subsidiary of Safety-Kleen, Inc. The~~ facility is located in Wichita, Kansas. The facility stores, treats, and recovers for recycling hazardous and nonhazardous wastes. ~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC blends materials containing heating value for beneficial use and energy recovery as hazardous waste fuel (e.g., cement kiln fuel) and recovers solvents for further management. ~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC also stores, processes, and otherwise manages waste solvents, sludges, solids, and water for subsequent shipment to other United States Environmental Protection Agency (USEPA) permitted (or interim status) facilities for distillation, beneficial reuse, or disposal. ~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC also stores waste solvent, hydrocarbons, paint-related waste streams, solids, corrosive waste streams, and water-based waste streams. Hazardous waste management at the facility includes, but is not limited to, fuel blending for energy recovery, other physical treatment (including shredding and granulating) for waste minimization or to render the waste more amenable for subsequent management, accumulation of materials for reclamation, accumulation for hazardous waste landfill disposal, accumulation of low BTU liquids for deepwell injection, repackaging for incineration, processing for solvent and carbon recovery, and storage of industrial waste waters for subsequent discharge. Storage and treatment occurs in both containers and tanks.

The facility operates under the requirements of the Resource Conservation and Recovery Act (RCRA) and the Kansas Hazardous Waste Management Act as set forth in Kansas Administrative Regulations (KAR), Title 28, Article 31. The KAR incorporate, with few additions, the RCRA regulations contained in 40 CFR 260 through 270. Therefore, this section will refer only to the federal regulations.

~~2.1Description of the Facility~~

This section discusses facility location, location information, facility layout, traffic information, and general facility process unit description as required by the Code of Federal Regulations (CFR); i.e., 40 CFR 270.14(b)(1), (10), (11) and (19). A map showing topographic detail as required by 40 CFR 270.14(b)(19) is also presented in this section.

A topographic map showing well locations required under 40 CFR 270.14(c)(3) is included in Section A, Part A Permit Application and this section. More specific information on the facility design and operation is presented in subsequent application sections C through N.

## B-2 Facility Location:

Figure B.1, Site Location Map (Drawing 50-01-01-001, Site Location Map) shows the location of the facility; the facility is located at 2549 North New York Avenue in Wichita, Kansas. This address is in the Northeast quarter of the Southeast quarter of Section 4, Township 27 South, Range 1 East. The facility is located in Sedgwick County (Sedgwick County population 403,662, 1990 census). The facility is located in an industrial area of Wichita; the population of Wichita was approximately 283,496 (estimated) as of 7/1/84 (Population for Kansas Counties and Incorporated Places[1]).

The facility and the surrounding area are shown on Figure B.2, Facility Map (Drawing 50-01-11-001, Facility Map); facility information is superimposed on a topographic base map with contour intervals of two (2) feet as required by 40 CFR 270.14(b)(19). The map/drawing is based on a topographic map generated in January of 1992 and includes areas within 1,000 feet of the facility. The facility is located approximately at north latitude 37E43'50" and west longitude 97E19'08". The area that includes the process plant area and hazardous waste storage areas

Figure B.1. Site Location Map

Figure B.2. Facility Map

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for tanks and containers make up the active portion of the facility. The facility boundary, a distance of 1000 feet around the facility boundary and the active portion of the facility are shown on Figure B.2 (Drawing 50-01-11-001). Privately owned land abuts the facility on three sides: Union Pacific Railroad and Overnite Transportation own property to the north; Derby Refinery is located south of the facility; and land owned by Derby refinery adjoins the site to the west. New York Avenue is located to the east of the facility.

The administration and hazardous waste management areas as well as general facility layout, access control, and sewer lines are shown on Figure B.3, Facility Layout (Drawing 50-01-01-002, Facility Layout). The hazardous waste storage buildings and associated loading areas are shown on Figure B.4, Hazardous Waste Management Areas (Drawing 50-01-10-001, Hazardous Waste Management Areas). The drawings generally show access roads and internal roadways, administration and process plant buildings, and hazardous waste management locations. The storage of ignitable and reactive wastes on-site is in compliance with the equipment

Buffer Zone requirements as set forth in 40 CFR 264.176, and 264.198(b). Specifics regarding container management, tank systems, and ~~equipment~~ are presented in Sections D, E, and M (Use and Management of Containers, Tank Systems and Other Regulated Units).

Figure B.3. Facility Layout

Figure B.4. Hazardous Waste Management Areas

## B-3 Location Information:

### B-3a Physiography, Geology and Land Use:

Sedgwick County is situated in the Arkansas River Lowlands section of the Central Lowlands physiographic province[2]. The facility is located in an area of very low topographic relief; elevation on site is about 1315 feet above MSL. The extreme flatness of the broad Arkansas River valley and gently rolling slopes provide the low relief of the vicinity.

In summary, the soil is developed on recent and old alluvial sediments of the Elandco and Tabler formations[3]. These sandy and clayey alluvial deposits are underlain by Wellington shale. Approximately 10 feet of alluvial clay with fine sand overlies approximately 30 feet of alluvial sand. Ground water source in the area is from permeable sands in the alluvial deposits; this ground water aquifer has transmissivities up to 250,000 gallons per day per foot. The water table in the vicinity, as reported in the Draft Remedial Investigation Report of the 29th and Mead

RI/FS (August 1991), is approximately 1293 feet above Mean Sea Level (MSL)[4].

The surrounding land is generally used for industrial purposes: land use to the south and west is by Derby Refinery, to the north by Union Pacific Railroad and Overnite Transportation, with highway I-135 to the east.

Past land use of the facility property has included light to medium industrial activities since approximately 1940.

**B-3b** **Climate:**

Wichita, Kansas is located in the Central Great Plains where a wide variety of weather conditions may occur year round. Mixing of warm, moist, Gulf coast air masses with cold, dry Arctic air masses can result in severe storms and rapid changes in weather conditions. Climatological information is based on National Oceanic and Atmospheric Administration (NOAA) data.

Temperature extremes from minus 21 degrees to more than 110 degrees Fahrenheit have been recorded in Wichita; however, temperatures below zero occur much less frequently than temperatures above 90 degrees Fahrenheit. The average relative humidity ranges from 55 percent in the afternoon to 80 percent at dawn. The average daily maximum temperature in summer is ninety-one degrees (91EF). The highest recorded temperature was 113EF (July 1954). The average daily minimum temperature in winter is twenty-three degrees (23EF). The lowest temperature on record was minus twenty-one degrees (-21EF) in February of 1982[5].

Prevailing winds are from the south; the most severe thunderstorms occur mainly during the spring and early summer. The highest, one-minute observed wind speed recorded was forty-eight (48) mph[5]. Figure B.5, Annual Surface Wind Rose (Drawing 50-00-01-001, Annual Surface Wind Rose) shows the prevailing wind direction and speed measured in Wichita, Kansas from 1951 to 1960.

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Figure B.5. Annual Surface Wind Rose

The majority of precipitation occurs during the period between April and September. The average precipitation is thirty (30) inches per year; the average seasonal snowfall is fifteen (15) inches. The heaviest one day rainfall for Wichita during the period of record from 1951 to 1980 was 5.03 inches (October, 1985). The 25-year, 24-hour precipitation event is 6.2 inches as determined from "Technical Paper No. 40, Rainfall Frequency Atlas of the United States" (US Dept. of Commerce)[6].

## B-3c Surface Water Drainage:

Surface water drainage is in two directions; most surface water on the site drains to the east branch of Chisholm Creek located east of the facility, although some surface water drains to the southwest into Chisholm Creek. The east branch joins Chisholm Creek south of the facility and Chisholm Creek discharges into the Arkansas river approximately 6 miles south of the facility. Surface water flow is shown on Figure B.2, Facility Map (Drawing 50-01-11-001).

B-3d **Floodplain:** **40 CFR 270.14(b)(11)(iii)**

A Flood Hazard Boundary Map prepared by the US Department of Housing and Urban Development, Federal Insurance Administration, for Sedgwick County, Kansas was reviewed pursuant to 40 CFR 270.14(b)(11)(iii). The Special Flood Hazard Area (100-year floodplain) within 1000 feet of the facility boundary is shown on Figure B.2, Facility Map (Drawing 50-01-11-001). The facility boundary is not within the 100 year floodplain. Therefore, the requirements of 40 CFR 264.18(b) are not applicable.

B-3e **Seismicity:** **40 CFR 270.14(b)(11)(i)and(ii)**

The ~~SKW~~CHK facility is located in Sedgwick County, Kansas. No areas in Kansas are listed in Appendix VI of 40 CFR, Part 264, as needing seismic consideration. The facility is not located in a seismic hazard zone, therefore, the requirements of 40 CFR 264.18(a) are not applicable.

## B-4 Traffic Information: 40 CFR 270.14(b)(10)

### B-4a Off-site Traffic:

Shipments of materials will be by truck or rail. It is expected that most truck shipments will access the facility from interstate highway I-135 using 21st Street North and New York Avenue. To handle rail shipments, a Union Pacific railroad siding is located along the north side of the facility. Figure B.1, Site Location Map (Drawing 50-01-01-001), shows these access routes.

Highway I-135 is a divided, six-lane, two-way, concrete interstate highway. The Average Daily Traffic (ADT) recorded by the Transportation Planning Division of the Kansas State Highway Department (KSHD) for this stretch of I-135 in 1990 was 50,973 vehicles south of the 21st Street interchange and 43,950 vehicles north of the interchange. Twenty-first (21st) Street is generally a four-lane, two-way thoroughfare; however, the roadway is split into a two-lane, one-way pair at the intersection with New York Avenue. The ADT recorded in 1990 on 21st Street to the west of the I-135 interchange was 14,924 vehicles. New York

Avenue is a low volume, industrial roadway consisting of two-lane, two-way traffic; no ADT is recorded.

Truck traffic into the facility may average up to approximately twenty (20) shipments of hazardous waste per day. Typical trucks accessing the facility will be tractor trailer rigs and straight trucks. The overall level of service on local streets and highways is not anticipated to be affected by facility traffic. Railcar traffic into the facility is expected to average up to two railcars per week.

The facility is located in an industrial area of Wichita. The existing local streets and highways currently accommodate heavy vehicles carrying the maximum legal load.

**B-4b** **On-site Traffic and Load-Bearing Capacity**:

Enclosed tractor trailers, tanker trucks, dump trucks, dump trailers, or intermodal transport container trailers, etc., may be used to transport materials to, from, and within the facility. The roadway foundation is adequate to accommodate traffic consisting of truck and trailer combination vehicles. No bridges exist on-site.

The most active areas on-site are surfaced to minimize the generation of dust and reduce maintenance requirements. Where surfaced, roadways are composed of six inch, reinforced concrete construction with stabilized sub-soil. All other traffic areas are provided with surface gravel and are maintained as needed.

Vehicular traffic into the plant is controlled through gate entrances. The active portion of the facility is divided by a public right-of-way. On-site traffic, between the main portion of the facility and Buildings I and J, includes crossing the public right-of-way at a ninety degree angle. On-site traffic routing, alignment of facility roadways, and internal traffic patterns are shown on Figure B.3, Facility Layout (Drawing 50-01-01-002). Loading and unloading areas are shown on Figure B.4, Hazardous Waste Management Areas (Drawing 50-01-10-001).

B-5 **Facility Security:** **264.14 and 122.25(a)(4)**

The facility security system is discussed in detail in Section G, Procedures to Prevent Hazards. Where required for security, the ~~SKW~~CHK facility is surrounded by a six foot chain link fence with gates (see Figure B.3, Facility Layout and Drawing 50-01-01-002). Personnel and vehicle access is controlled by an electronic system which is designed to prevent the unknowing entry, and minimize the unauthorized entry, of persons or livestock onto active portions of the facility. This system may be shut down for maintenance operations at which time security will be provided by facility personnel or locked gates. Note that fencing is not provided where buildings and building entrances provide a barrier to unauthorized entry. To meet the security requirements of 40 CFR 264.14 in areas without fencing or building walls/doors, 24 hour surveillance will be provided when required. In addition, employees are instructed to question and direct unauthorized visitors to the office should they try to enter the active portion of the facility.

Warning signs as required by 40 CFR 264.14 have been placed at each entrance and along the barrier to unauthorized entry surrounding the facility.

Inspection of the fence line and signs are included in the facility inspection plan (See Section F, Inspection Plan for additional details).

B-6 **Facility Process Unit Description:**

As required in 40 CFR 270.14(b)(1), the following is a general overview of the facility; additional details are provided in Section D (Use and Management of Containers), Section E (Tank Systems), Section L (Solid Waste Management Units and Corrective Action) and Section M (Other Regulated Units). The hazardous waste management units at the facility include storage and treatment tanks, container management units, waste loading and unloading facilities and waste processing facilities. Typical sources of waste include automotive manufacturers, tire manufacturers, plating facilities, aircraft manufacturers, as well as the food processing, pharmaceutical, oil industries automotive repair shops, industrial maintenance operations, drycleaning facilities, and other industrial sources

Prior to acceptance of a waste stream, ~~SKW Safety-Kleen~~the facility requires the generator to supply specific information about the waste. After a review of information supplied by the generator has been deemed completed and prior to waste receipt at the facility, ~~SKW~~CHK personnel determine the proposed management practices for the waste at the facility. Generators are then advised that their waste stream may be accepted or that management of the waste

stream at ~~SK~~WCHK has been denied. The properties of incoming waste streams (i.e., shipments) from the generator are compared against the information supplied prior to shipment. For further details regarding waste receipt and analysis, refer to Section C (Waste Characterization).

Final and partial closure plans for the ~~SK~~WCHK facility are provided in Section J (Closure Plan). ~~SK~~WCHK maintains financial assurance for facility closure and insurance; details are described in Section K (Financial Requirements). Equipment (in hazardous waste service) removed for replacement during maintenance operations will be decontaminated and managed according to procedures similar to closure procedures as delineated in Section J.

**B-6a** **Process Area Description:**

A variety of hazardous waste management units are utilized for storage, treatment or to otherwise manage wastes at the ~~SK~~WCHK facility; e.g., container management units and tank systems as well as processing equipment. Section A (Part A Permit Application) lists storage buildings, tanks, and processes utilized by ~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC Additional buildings, such as an administration building, personnel change rooms, laboratory, and etc., are also provided to support the various unit operations. Refer to Figure B.3, Facility Layout (Drawing 50-01-01-002) for general location of these buildings.

The general location of waste management areas are depicted on Figure B.4, Hazardous Waste Management Areas (Drawing 50-01-10-001); flow of wastes between units is addressed in Section N (Air Emissions). A general description of tank, container and processing systems follows. Detailed discussions of these systems is provided in Sections D (Use and Management of Containers), E (Tank Systems) and M (Other Regulated Units).

Hazardous waste storage, treatment, and processing occurs in seven storage areas at the ~~SKW~~CHK facility. Hazardous waste is managed in tanks, containers and process units in Building D and the Processing Area; Building C, the Drum Dock, Building B, Building I and Building J are utilized for hazardous waste management in containers and process units. An overview regarding these activities is presented in the following paragraphs.

## B-6b Container Management Systems:

Seven (7) buildings at the facility are designated for container management. Permitted storage capacities for each building are designated in Addendum B to the Part A Permit Application (Section A). Container management areas will be operated such that the stored volume will not exceed the permitted capacity. The volume of waste stored in any of the container storage buildings is dictated by containment volumes and operational requirements. Specifics regarding container management at the facility are discussed in Section D, Container Management.

## B-6c Tank Systems:

A variety of tank systems are used at the ~~SKW~~CHK facility. Tanks are used to store and/or treat liquids, solids, and sludge. The tank systems presently in use or planned are identified and discussed in detail in Section E, Tank Systems.

B-6d **Other Regulated Units:**

Additional units are utilized for hazardous waste management activities at the ~~SKW~~CHK facility; these units are discussed in detail in Section M, Other Regulated Units.

B-6e **Non-regulated Units and Activities:**

In addition to hazardous wastes regulated under 40 CFR 264, other industrial wastes as well as selected household wastes are managed at the ~~SKW~~CHK facility. These wastes include, but are not limited to, used oil destined for burning for energy recovery (regulated under 40 CFR 266 Subpart E), synthetic oil reprocessing, industrial coolants and waste waters.

Processing equipment on-site as described in the Part A application may be utilized for management of non-hazardous waste. The procedures used for decontaminating equipment between hazardous waste service and subsequent non-hazardous waste service are provided in Attachment C-A to Section C (Waste Characterization) and Section E (Tank Systems).

## B-7 Anticipated Change of Operations/Units:

Additional waste management and operations planned for the ~~SKW~~CHK facility after permit issuance are of two types: 1) changes as a result of new regulations and permitting requirements, and 2) expansion of operations to meet the challenges of future local and regional waste management requirements. Anticipated waste management needs include:

- The addition of newly identified wastes (as they become regulated) to the Part A permit;

- Modification of the facility and permit application to accommodate evolving local, state, and federal regulations.

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## Endnote References

1. Kansas Department of Agriculture, 1986. Population for Kansas Counties and Incorporated Places. Document Number AD 11.19, 1986, 12 pp.

2. Lane, Charles W. and Don E. Miller, December, 1965. Geohydrology of Sedgwick County, Kansas. State Geological Survey of Kansas, Bulletin 176, 100 pp.

3. United States Department of Agriculture, Soil Conservation Service, April, 1979. Soil Survey of Sedgwick County, Kansas. 126 p.

4. Groundwater Technology, Inc., August 1991. Draft Remedial Investigation Report of the 29th and Mead RI/FS. Volume 1, prepared for Wichita North Industrial District, 60 pp.

5. US Department of Commerce - National Oceanic and Atmospheric Administration, 1989. Local Climatological Data - Annual Summary With Comparative Data - Wichita, Kansas. ISSN 0198-2214, 8 pp.

6. Hershfield, David M., US Dept. of Commerce, Soil Conservation Service, Rainfall Frequency Atlas of the United States - Weather Bureau Technical Paper No. 40, 115 pp.

# Attachment C-A

# Typical Forms

## Attachment C-A

### Table of Contents:

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insert pages of

Waste Profile Sheet (1 page)

Uniform Manifest (1 page)

Uniform Manifest Instructions (1 page)

Notification of Waste Subject to Land disposal Restrictions (2 pages)

Certification by Generator or Treatment Facility of Restricted Waste Meeting Treatment Standards (1 page)

Table CCWE (1 page)

Table CCW (5 pages)

List of Halogenated Organic Compounds Regulated Under Section 268.32 (1 page)

Non-Hazardous Waste Form (1 page)

Waste Acceptance Sheet (1 page)

# Attachment C-B

# Waste List

April 13, 1995

**~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC**
**RCRA Permit Application**
**Section C - Waste Characterization**
**Appendix C-A - Waste Analysis Plan**
**Attachment C-B - Waste List**

insert waste list ___ pages

file name: Safety-Kleen ( Wichita), Inc.-WAST.LST

**February 18, 1992**

# Attachment C-C

# Analytical Methods

February 18, 1992

## Attachment C-C

**Table of Contents:**

## Standard Method References

The standard methods referenced on the following pages are detailed in the publications provided below.

| | |
|---|---|
| SW-846 | "Test Methods for Evaluating Solid Waste"; SW-846; U.S. Environmental Protection Agency, Office of Water and Waste Management, Washington, D.C. 20406; in effect as of January 31, 1992. |
| APHA | "Standard Methods for the Examination of Water and Waste Water", 16th edition, American Public Health Association, 1985. |
| ASTM | "Annual Book of ASTM Standards", American Society for Testing Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103. |
| EPA-600/4-79-020 | "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020; U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268, March 1979. |
| 40 CFR | 40 Code of Federal Regulations, Parts 260-268 (1991 edition). |

Examples of Standard Test Methods and Procedures
and LES Analytical Procedures **[6 pages]**

| Parameter | Method | Reference |
|---|---|---|
| **Sample Work Up Techniques** | | |
| **Inorganic Techniques** | | |
| Acid digestion procedure for flame atomic absorption spectroscopy or inductively coupled plasma spectroscopy | 3005 | SW-846 |
| Acid digestion procedure for flame atomic absorption spectroscopy or inductively coupled plasma spectroscopy | 3010 | SW-846 |
| Acid digestion procedure for furnace atomic absorption spectroscopy | 3020 | SW-846 |
| Acid digestion of oils, greases, or waxes | 3030 | SW-846 |
| Dissolution procedure for oils, greases, wax | 3040 | SW-846 |
| Acid digestion of sludges | 3050 | SW-846 |
| Alkaline digestion | 3060 | SW-846 |
| Microwave assisted acid digestions from USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis | | EPA-CLP |
| **Organic Techniques** | | |
| Extraction Procedure for Oily Wastes | 1330 | SW-846 |
| Organic Extraction and Sample Preparation | 3500 | SW-846 |
| Waste Dilution | 3580 | SW-846 |
| Separatory funnel liquid-liquid extraction | 3510 | SW-846 |
| Continuous liquid-liquid extraction | 3520 | SW-846 |
| Acid-base cleanup extraction | 3530 | SW-846 |
| Soxhlet extraction | 3540 | SW-846 |
| Sonication extraction | 3550 | SW-846 |
| Purge and Trap | 5030 | SW-846 |
| Hexadecane Extraction and Screening of purgeable organics | 3820 | SW-846 |

| Inorganic Analytical Methods | | |
|---|---|---|
| Inductively coupled plasma atomic emission spectroscopy | 6010 | SW-846 |
| Antimony | | |
| Atomic absorption, direct aspiration method | 7040 | SW-846 |
| Atomic absorption, furnace method | 7041 | SW-846 |
| Arsenic | | |
| Atomic absorption, furnace method | 7060 | SW-846 |
| Atomic absorption, gaseous hydride method | 7061 | SW-846 |
| Barium | | |
| Atomic absorption, direct aspiration method | 7080 | SW-846 |
| Atomic absorption, furnace method | 7081 | SW-846 |
| Beryllium | | |
| Atomic absorption, direct aspiration method | 7090 | SW-846 |
| Atomic absorption, furnace method | 7091 | SW-846 |
| Cadmium | | |
| Atomic absorption, direct aspiration method | 7130 | SW-846 |
| Atomic absorption, furnace method | 7131 | SW-846 |
| Chromium | | |
| Atomic absorption, direct aspiration method | 7190 | SW-846 |
| Atomic absorption, furnace method | 7191 | SW-846 |
| Hexavalent chromium: co-precipitation | 7195 | SW-846 |
| Hexavalent chromium: colorimetric | 7196 | SW-846 |
| Hexavalent chromium: chelation-extraction | 7197 | SW-846 |
| Hexavalent chromium: diff. phase polarography | 7198 | SW-846 |
| Copper | | |
| Atomic absorption, direct aspiration method | 7210 | SW-846 |
| Atomic absorption, furnace method | 7211 | SW-846 |
| Lead | | |
| Atomic absorption, direct aspiration method | 7420 | SW-846 |
| Atomic absorption, furnace method | 7421 | SW-846 |

| | | |
|---|---|---|
| Mercury | | |
| In liquid waste (manual cold-vapor technique) | 7470 | SW-846 |
| In solid or semisolid waste (manual cold-vapor technique) | 7471 | SW-846 |
| Nickel | | |
| Atomic absorption, direct aspiration method | 7520 | SW-846 |
| Atomic absorption, furnace method | 7521 | SW-846 |
| Osmium | | |
| Atomic absorption, direct aspiration method | 7550 | SW-846 |
| Atomic absorption, furnace method | 7551 | SW-846 |
| Selenium | | |
| Atomic absorption, furnace method | 7740 | SW-846 |
| Atomic absorption, gaseous hydride method | 7741 | SW-846 |
| Silver | | |
| Atomic absorption, direct aspiration method | 7760 | SW-846 |
| Atomic absorption, furnace method | 7761 | SW-846 |
| Thallium | | |
| Atomic absorption, direct aspiration method | 7840 | SW-846 |
| Atomic absorption, furnace method | 7841 | SW-846 |
| Vanadium | | |
| Atomic absorption, direct aspiration method | 7910 | SW-846 |
| Atomic absorption, furnace method | 7911 | SW-846 |
| Zinc | | |
| Atomic absorption, direct aspiration method | 7950 | SW-846 |
| Atomic absorption, furnace method | 7951 | SW-846 |

| Organic Analytical Methods | | |
|---|---|---|
| **Gas Chromatographic Methods** | | |
| Halogenated Volatile Organics | 8010 | SW-846 |
| Nonhalogenated Volatile Organics | 8015 | SW-846 |
| Aromatic Volatile Organics | 8020 | SW-846 |
| Acrolein, Acrylonitrile, Acetonitrile | 8030 | SW-846 |
| Phenols | 8040 | SW-846 |
| Phthalate Esters | 8060 | SW-846 |
| Organochloride Pesticides and PCBs | 8080 | SW-846 |
| Nitroaromatics and Cyclic Ketones | 8090 | SW-846 |
| Polynuclear Aromatic Hydrocarbons | 8100 | SW-846 |
| Chlorinated Hydrocarbons | 8120 | SW-846 |
| Organophosphate Pesticides | 8140 | SW-846 |
| Chlorinated Herbicides | 8150 | SW-846 |
| **Gas Chromatographic/Mass Spectroscopy Methods for Organics** | | |
| Volatile Organics | 8240 | SW-846 |
| Volatile Organics | 8260 | SW-846 |
| Semivolatile Organics: | | |
| Packed Column Technique | 8250 | SW-846 |
| Capillary Column Technique | 8270 | SW-846 |
| Polychlorinated Dibenzo-P-Dioxins and Polychlorinated Dibenzofurans | 8280 | SW-846 |

| Miscellaneous Analytical Methods | | |
|---|---|---|
| Acidity | 402 | APHA |
| Alkalinity | 403 | APHA |
| Percent Ash | D482 | ASTM |
| Bulk Density | D1429 | ASTM |
| Chlorine | D808 | ASTM |
| Compatibility Test for Wastes and Membrane Liners | 9090 | SW-846 |
| Corrosivity towards steel | 1110 | SW-846 |
| Releasable Cyanides | 7.3.3.2 | SW-846 |
| Releasable Sulfides | 7.3.4.2 | SW-846 |
| Flash Point (closed cup) | D93 | ASTM |
| Flash Point (open cup) | D92 | ASTM |
| Heat Release | D240 | ASTM |
| Ignitability (Pensky-Martens closed-cup method) | 1010 | SW-846 |
| Ignitability (Setaflash closed-cup method) | 1020 | SW-846 |
| $NH_3$-Nitrogen | 350.3 | EPA-600/ 4-79-020 |
| $NH_3$-Nitrogen | 417 | APHA |
| Nitrate (Ion Chromatography) | 300.1 | EPA-600/ 4-79-020 |
| Nitrate (Colormetric) | 9200 | SW-846 |
| Nitrate-Nitrogen | 418 | APHA |
| Nitrate-Nitrogen | 352.1 | EPA-600/ 4-79-020 |
| Total Recoverable Oil & Grease | 9070 | SW-846 |
| Oil & Grease Extraction Method for Sludge Samples | 9071 | SW-846 |
| Oil & Grease | D4281 | ASTM |
| Oil & Grease | 503 | APHA |
| Total Organic Carbon (TOC) | 9060 | SW-846 |
| Total Organic Halides (TOX) | 9020 | SW-846 |
| Paint Filter Liquids Test (Free Liquids Test) | 9095 | SW-846 |
| Soil pH | 9045 | SW-846 |
| Phosphorous | 365.4 | EPA-600/ 4-79-020 |
| Phosphorous | 424 | APHA |
| Total Solids Dried at 103°C - 105°C | 160.3 | EPA-600/ 4-79-020 |
| Total Solids Dried at 103°C - 105°C | 209A | APHA |
| Total Suspended Solids (Filterable Residue) | 209C | APHA |
| Fixed & Volatile Solids (Non-filterable Residue) 2-209D | 209D | APHA |
| Specific Gravity | D1298 | ASTM |
| Total Sulfur | D129-64 | ASTM |
| Total Sulfides | 9030 | SW-846 |
| TCLP | Appendix I | 40 CFR 268 |
| EP Toxicity | Appendix II | 40 CFR 261 |

| | | |
|---|---|---|
| Viscosity | D445 | ASTM |
| Water Content (Karl Fischer Method) | D1744 | ASTM |
| Water Content (Centrifuge Method) | D1796 | ASTM |
| ~~Normality~~ | ~~USPCI-1~~ | ~~SKW WAP~~ |
| Normality | USPCI-1 | CHK WAP |
| ~~Water Reactivity Screen~~ | ~~USPCI-2~~ | ~~SKW WAP~~ |
| Water Reactivity Screen | USPCI-2 | CHK WAP |
| ~~Solids Screen~~ | ~~USPCI-3~~ | ~~SKW WAP~~ |
| Solids Screen | USPCI-3 | CHK WAP |
| ~~Reactive Cyanides Screen~~ | ~~USPCI-4~~ | ~~SKW WAP~~ |
| Reactive Cyanides Screen | USPCI-4 | CHK WAP |
| ~~Reactive Sulfides Screen~~ | ~~USPCI-4~~ | ~~SKW WAP~~ |
| Reactive Sulfides Screen | USPCI-4 | CHK WAP |
| ~~Explosivity Screen~~ | ~~HRW-1~~ | ~~SKW WAP~~ |
| Explosivity Screen | HRW-1 | CHK WAP |
| ~~Explosivity Meter Vapor Test~~ | ~~USPCI-5~~ | ~~SKW WAP~~ |
| Explosivity Meter Vapor Test | USPCI-5 | CHK WAP |
| ~~Oxidizer Screen~~ | ~~USPCI-6~~ | ~~SKW WAP~~ |
| Oxidizer Screen | USPCI-6 | CHK WAP |
| ~~Radioactivity Screen~~ | ~~USPCI-7~~ | ~~SKW WAP~~ |
| Radioactivity Screen | USPCI-7 | CHK WAP |
| ~~Fixation Requirement~~ | ~~USPCI-8~~ | ~~SKW WAP~~ |
| Fixation Requirement | USPCI-8 | CHK WAP |
| ~~Reducer Screen~~ | ~~USPCI-10~~ | ~~SKW WAP~~ |
| Reducer Screen | USPCI-10 | CHK WAP |
| ~~Extraction for Solids~~ | ~~USPCI-11~~ | ~~SKW WAP~~ |
| Extraction for Solids | USPCI-11 | CHK WAP |
| ~~Radiant Heat Ignition Test~~ | ~~USPCI-21~~ | ~~SKW WAP~~ |
| Radiant Heat Ignition Test | USPCI-21 | CHK WAP |
| ~~Ignitability of Solids~~ | ~~HRIW-3~~ | ~~SKW WAP~~ |
| Ignitability of Solids | HRIW-3 | CHK WAP |
| ~~Compatability Evaluation~~ | ~~USPCI-25~~ | ~~SKW WAP~~ |
| Compatability Evaluation | USPCI-25 | CHK WAP |
| ~~HOC Screen~~ | ~~HRIW-2~~ | ~~SKW WAP~~ |

| | | |
|---|---|---|
| HOC Screen | HRIW-2 | CHK WAP |

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC

Analytical Procedures

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC **ANALYTICAL PROCEDURE 1**

**(USPCI - 1)**

**NORMALITY**

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC **ANALYTICAL PROCEDURE 1**

**(USPCI - 1)**

**NORMALITY**

**(Acidity or Alkalinity)**

## 1.0 SCOPE AND APPLICATION

1.1 This method is for determining normality (acidity or alkalinity) of hazardous waste samples that are acidic or caustic liquids.

1.2 It should be noted that the data generated from normality measurements are used for two purposes. One is as a part of the incoming load (fingerprint) procedure to ensure that pre-shipment samples of waste streams are representative of the loads actually sent. A difference of +/-1.25 normality units is considered a discrepancy. The other purpose is to give an indication of the volumes of acidic and caustic waste streams that must be mixed together for neutralization before disposal. Neither of these purposes require accurate values for low normality samples. Therefore, the procedure which is used and given here is one that gives sufficient accuracy for high normality samples.

## 2.0 SUMMARY OF METHOD

2.1 The liquid waste is titrated with a titrant that is the opposite pH (e.g. titrate an acidic waste with a caustic titrant). Solids are added to a nominal volume of deionized water (DIW) for titration, if desired. The normality is calculated by using the amounts of the sample and titrant and the known normality of the titrant. The end point of the titration is determined by a calibrated pH meter.

## 3.0 INTERFERENCES

3.1 Response times for glass pH electrodes may be slowed by oil films on the electrode.

**4.0 SAFETY**

4.1 Wear appropriate gloves and safety glasses when handling acids and caustics.

4.2 Prevent spills and splashes. Wash areas (if spill occurs) thoroughly with water.

4.3 If sample has extremely high normality, splattering may occur when titrating. Therefore, analysis should be performed in the hood.

4.4 Do not breath vapors; keep samples in the hood.

**5.0 APPARATUS AND EQUIPMENT**

5.1 Buret - Pyrex or Kimax, 25 ml, with divisions of 0.1 ml. or equivalent. One each for acid and base titrants.

5.2 10 ml and 50 ml disposable polystyrene beakers.

5.3 pH meter

**6.0 REAGENTS**

6.1 pH buffers: Baker Analyzed 5657-1 (pH 4), 5655-1 (pH 10), 5656-1 (pH 7), or equivalents.

6.2 Concentrated hydrochloric acid, 12 N: Baker Analyzed Reagent 9535-3, or equivalent.

6.3 Hydrochloric acid, 3 N: Add slowly, while stirring, 258 ml of HCL acid (6.2) and dilute to 1 liter.

6.4 Sodium Hydroxide, 3 N: Dissolve 120 g of NaOH (6.5) in 800 ml of Type I water while stirring. Dilute to 1 liter.

6.5 Sodium Hydroxide: Mallinckrodt AR# 7708-5, or equivalent.

**7.0 SAMPLE HANDLING AND PRESERVATION**

7.1 Handle sample with extreme caution; wearing gloves and glasses.

7.2 No preservation required.

7.3 If sample fumes, store in refrigerator at 4°C.

**8.0 pH - METER CALIBRATION AND STANDARDIZATION**

8.1 Make up pH 4 and pH 7 buffer solutions by emptying the complete sachet contents into beakers and dissolving in the stated volume of distilled water. Pre-mixed and certified buffers may also be used.

8.2 Calibrate pH meter according to manufacturer's instructions. Record calibration settings in instrument log.

**9.0 QUALITY CONTROL**

9.1 Duplicates. For preacceptance samples, at least one duplicate must be analyzed per sample set or 10% of total samples. For incoming load samples, at least one duplicate analysis set must be analyzed per shift.

9.2 The normality of the titrants are checked against a primary standard on a regular basis.

9.3 Control Charts

9.3.1 Precision control charts for monitoring of relative percent difference of duplicate analysis are maintained.

9.3.2 Accuracy control charts for the normality checks are maintained.

**10.0 PROCEDURE**

10.1 Use a 10 ml disposable beaker to measure 10 ml of a liquid sample into a 50 ml disposable beaker. If the sample is solid, add 1.0 gm to 10 ml of DIW.

10.2 Stir gently with the calibrated and rinsed pH probe. Record the initial pH.

10.3 For samples with pH greater than 10.5 or less than 4.5 a titration with 3 N acid or base titrant, respectively, is performed. Titrate slowly with continuous stirring until the pH reaches 7.0.

10.4 Read and record the volume of titrant used.

10.5 Samples of high normality can use a smaller sample aliquot as required.

**11.0 CALCULATIONS**

11.1 Normality of sample =

$$\frac{\text{Normality of Titrant x Volume of Titrant (mL)}}{\text{Volume of Sample (mL or gm)}}$$

11.2 Duplicate calculation:

$$\% \text{ Difference} = \frac{(D_1 - D_2) \times 200}{D_1 + D_2}$$

where: $D_1$ = first sample value
$D_2$ = second sample value

**12.0 DATA FLAGGING AND REMEDIAL ACTION**

12.1 Data will be flagged by the analyst if data generated creates an "out-of-control" situation on the Precision or Accuracy Control Chart.

12.2 Remedial action

12.2.1 When data is flagged, the following areas are reviewed by the analyst and/or supervisor:

12.2.1.1 Calibration and standardization.

12.2.1.2 Analysis trends as indicated by control charts.

12.3 When a problem is located, sample analysis is repeated.

**13.0 REFERENCES**

Chemistry, 2nd Edition, Yoder, Claude H., Snydam, Fred H., Snavely, Harcourt Brace Jovanovich, Inc., 1980, 1975.

Standard Methods for the Examination of Water & Wastewater, 16th Edition, American Public Health Association, American Water Works Association, Water Polution Control Federation, 1985.

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC **ANALYTICAL PROCEDURE 2**

**(USPCI - 2)**

**WATER REACTIVITY SCREEN**

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 2

(USPCI - 2)

WATER REACTIVITY SCREEN

**1.0 SCOPE AND APPLICATION**

1.1 This method is used to screen materials for violent reactions with water.

**2.0 SUMMARY OF METHOD**

2.1 Sample is slowly added to water until a 50/50 volume/volume mixture is obtained. The mixture is observed to detect heating (more than a 15°C temperature rise) or turbulent gas evolution (more than 10% of the mixture volume).

**3.0 SAFETY**

3.1 Always add sample slowly to water, not water to sample.

3.2 Wear appropriate gloves and safety glasses.

3.3 Perform the mixing in a hood to prevent gases evolved from entering the laboratory.

**4.0 PROCEDURE**

4.1 Pour 25 ml of water into a disposable 50 ml beaker. Measure the initial water temperature. Slowly add sample until the beaker reaches the 50 ml level.

4.2 If the mixture warms significantly, use a thermometer to check temperature. If it is more than 15°C above the initial water sample temperature the sample is considered to be water reactive.

4.3 If bubbles or gas is formed causing turbulence, the sample is also considered to be water reactive due to gas evolution.

4.4 If sample is water reactive due to temperature rise and the sample has a large enough acid or base normality to account for temperature rise due to acid or base dilution, the sample is noted to be water reactive due to acid or base dilution.

4.5 If the reaction is questionable, the amount of sample is scaled up with 10 times the amount of water and re-tested.

**5.0 QUALITY CONTROL**

5.1 Duplicates. For preacceptance samples, at least one duplicate must be analyzed per sample set or 10% of total samples. For incoming load samples, at least one duplicate analysis set must be analyzed per shift.

5.2 Because this test yields a "yes" or "no" answer, regular quality control charts will not be kept. All discrepancies between duplicate samples must be explained and noted.

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC **ANALYTICAL PROCEDURE 3**

**(USPCI - 3)**

**SOLIDS SCREEN**

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 3

(USPCI - 3)

SOLIDS SCREEN

1.0 **SCOPE AND APPLICATION**

This is a rapid and accurate method for determining the total solids content of liquids, sludges and solid samples by drying to maximum weight loss at approximately 105°C.

2.0 **SUMMARY OF METHOD**

An approximate 10 grams of sample are accurately weighed and dried on a moisture balance. Weights before and after drying are compared to calculate % solids.

3.0 **INTERFERENCES**

Underheating and/or inadequate drying time will not remove all components normally volatilized at 105°C. Adequate heater and timer settings are developed for each type of sample to prevent these interferences.

4.0 **SAFETY**

4.1 This method should not be used with explosives or ignition could result.

4.2 Appropriate gloves and safety glasses should be worn while handling samples.

4.3 This method should be performed in the hood to prevent volatile compounds from entering the laboratory atmosphere.

5.0 **APPARATUS AND EQUIPMENT**

Ohaus Moisture Determination Balance Model 6010 with aluminum sample pans.

6.0 **QUALITY CONTROL**

6.1 Duplicates. For preacceptance samples, at least one duplicate must be analyzed per sample set or 10% of total samples. For incoming load samples, at least one duplicate analysis set must be analyzed per shift.

6.2 Control Samples are run on a regular basis.

6.3 Quality Control Charts are kept for monitoring precision (duplicates), and accuracy (control samples).

**7.0 PROCEDURE**

7.1 Approximately 10 grams of well mixed sample are accurately weighed onto a tared aluminum sample pan on the moisture balance. This weight is the initial weight.

7.2 The temperature setting is checked weekly when the control sample is run. The setting will be recorded on the control chart log. This will be the setting used each week. Set the timer setting at 10 minutes. Check sample at end of time, if free liquids are still present heat an additional 5 minutes.

7.3 % total solids is calculated using the formula:

$$\% \text{ total solids} = \frac{\text{Final Weight} \times 100}{\text{Initial Weight}}$$

**8.0 REFERENCES**

Instructions for Ohaus Moisture Determination Balance Model 6010, 1982.

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 4

(USPCI - 4)

REACTIVE CYANIDES AND REACTIVE SULFIDES SCREEN

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 4

(USPCI - 4)

# REACTIVE CYANIDES AND REACTIVE SULFIDES SCREEN

## 1.0 SCOPE AND APPLICATION

This method provides a rapid qualitative test to determine the potential for samples to generate HCN or $H_2S$ upon acidification.

## 2.0 SUMMARY OF METHOD

A small amount of sample is acidified to pH $\leq$ 2 using nitric acid and the atmosphere above the sample is tested using Drager detector tubes for hydrogen cyanide and hydrogen sulfide.

## 3.0 SAFETY

3.1 Wear appropriate gloves and safety glasses.

3.2 This test must be performed in a hood to prevent poisonous HCN and/or $H_2S$ from escaping into the lab atmosphere.

## 4.0 INTERFERENCES

According to the Drager tube handbook there are no interferences that prevent sensing of HCN, however it has been documented from time to time that unknown substances will cause the tube to turn an orange rather than the tell-tale blood red. Also, the white from part of the tube will turn black in the presence of $H_2S$. Sulphur dioxide may increase the measured concentration value of $H_2S$, but will not prevent $H_2S$ from being detected.

## 5.0 PROCEDURE

5.1 Approximately 25 ml of sample is placed in a disposable 50 ml beaker and acidified with 3 normal nitric acid until the pH is 2.0. Samples with initial pH values at or below 2.0 need not be acidified further.

5.2 While the sample is being acidified, the atmosphere directly above the sample is tested using a Drager gas detector.

Sample tube Hydrogen Cyanide 2/a is used for HCN detection and sample tube Hydrogen Sulfide 100/a is used for $H_2S$ detection. The HCN tube needs five pumps; the Sulfide tube one.

5.3 If appropriate, additional analysis will be performed using either EPA Method SW-846-9010 for cyanide or EPA Method SW-846-9030 for sulfides.

**6.0 QUALITY CONTROL**

6.1 Duplicate samples are run at least once every set of 10 pre-acceptance samples.

6.2 Discrepancies (positive vs. negative results) between duplicate samples must be explained.

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 5

(USPCI - 5)

EXPLOSIVITY METER VAPOR TEST (TLV SNIFF)

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 5

(USPCI - 5)

# EXPLOSIVITY METER VAPOR TEST (TLV SNIFF)

## 1.0 SCOPE AND APPLICATION

The TLV Sniffer is an extremely sensitive combustible gas and vapor sensing instrument; equipped with an audible alarm that can be set to sound at any desired level of gas concentration. The TLV is also useful for locating gas leaks. Another function is continuous self monitoring.

## 2.0 SUMMARY OF METHOD

To detect and measure concentrations of combustible gas in the air, the TLV Sniffer catalytically oxidizes gas in a pumped in sample of air by means of a catalyst-coated resistance element. The resistance of this element changes with changes in temperature that are proportional to the amount of oxidized gas, thereby altering the electrical balance of the catalytic element as compared to the resistance of a reference element. Both the catalyst-coated ("active") element and the reference element are incorporated in a Wheatstone Bridge circuit in such a way as to produce an electrical output proportional to their differences in resistance. Since any changes in air sample temperature and humidity affect both active and reference elements equally the electrical signal output is proportional to the concentrations of combustible gas or vapor in the sample of air (expressed in volumetric terms as ppm). However, sudden changes in humidity may affect the zero reading on the X 1 range. The instrument, therefore, should be zeroed at the sam R.H. prevailing during use.

## 3.0 INTERFERENCES

3.1 Improper calibration of instrument or setting meter zero in the presence of impure air will cause inaccurate readings.

3.2 Wisps of cigarette smoke, fumes from autos, and subtle air contaminants from other sources may affect zero setting.

**4.0 SAFETY**

If high volumes of gas are detected or suspected, a respirator should be worn. No flames or sparks should ever be present.

**5.0 APPARATUS AND EQUIPMENT**

5.1 TLV Sniffer - Bacharach by United Technologies, or equivalent.

5.2 Gas Calibration Kit - Bacharach, Code 51-7199, or equivalent.

**6.0 REAGENTS**

None

**7.0 SAMPLE HANDLING AND PRESERVATION**

Keep sample container tightly sealed. **DO NOT** open until starting analysis. If highly volatile, refrigerate sample at 4 degrees Celsius.

**8.0 CALIBRATION AND STANDARDIZATION**

8.1 Battery test:

Turn MODE SELECTOR knob from OFF position to BATT TEST position. Meter pointer should come to rest in BATTERY GOOD range of meter scale. (Both a meter reading below BATTERY GOOD range and an audible signal warn of batteries too weak to sustain normal operation).

8.2 Setting meter pointer to zero:

8.2.1 Attach air sampling probe connector to instrument intake on left side of case by pulling back spring collar of connector, pressing connector over intake, and releasing spring collar.

8.2.2 Place TLV Sniffer in position in which meter indications will be read (usually in meter up position).

**NOTE:** Heat distribution from active and reference filaments of the detector sensor changes from vertical to horizontal position. The resulting change in electrical balance between elements causes a shift in pointer zero from one position to the other.

8.2.3 Set MODE SELECTOR switch to ppm x 100 and operate instrument for 10 minutes to allow circuits to stabilize.

8.2.4 In fresh air, set ZERO ADJUST knob at midpoint (five full turns from either extreme position). If fresh air is not available, use Bacharach Kit 51-7199 to apply known pure air to the Sniffer intake (instructions in kit).

8.2.5 Turn coarse adjustment screw, located under ZERO ADJUST knob, to move meter pointer to zero on the meter scale.

8.2.6 Turn MODE SELECTOR to ppm x 10 position and turn AERO ADJUST knob to set pointer to meter zero.

8.2.7 Turn MODE SELECTOR to ppm x 1 position and turn ZERO ADJUST knob to set pointer to zero.

**NOTE:** The TLV Sniffer is extremely sensitive in the ppm x 1 range. $CO_2$ from breath too close to the intake, cigarette smoke, auto fumes, etc., can interfere with accurate setting of the pointer to meter zero.

8.3 Setting meter pointer deflection (gain calibration).

To insure proper operation and to check calibration, it is necessary to periodically check the instrument against a known standard blend of calibration gas.

The Bacharach Code 51-7199 gas calibration kit and optionally available Code 51-1120 rectified gas cylinder containing 500 ppm hexane in air are readily available to meet this requirement.

Connect the gas transfer assembly, making certain all connections are air tight. Use the retaining clips (2 each) to mount Flowmeter (06-6163) to its mounting bracket (51-1201). Make certain to connect rubber tubing at the base inlet connection on the flowmeter, then to the barbed fitting on the regulator and to the quick connect fitting previously installed on the TLV sample inlet (inlet fitting). Turn regulator valve (03-4318) fully counterclockwise (close position) before attempting to screw regulator into calibration gas tank. This test is to be performed in a clean, fresh air (combustible free) environment. If this is not possible, substitute Code 51-7131 zero calibration gas for the Code 51-1120 cylinder of hexane-air mixture.

Connect the gas transfer assembly at the TLV sample in (inlet) fitting.

Open the regulator valve (clockwise) and adjust for flowmeter indication of (1) cfh to ensure adequate pump flow.

Remove Code 51-7131 zero calibration gas and substitute the Code 51-1120 cylinder of hexane-air mixture before proceeding with Step 6.

To calibrate the instrument in fresh air (combustible free) environment, proceed as follows:

8.3.1 Remove case cover for access to internal adjustments and temporarily break gas transfer assembly connection at the TLV Sample-In (inlet) fitting.

8.3.2 Turn FINE ZERO ADJUST (pot) full clockwise and then five turns counterclockwise to mid-range. Then turn COARSE ADJUST (pot) full clockwise and ten turns counterclockwise to mid-range.

8.3.3 Turn MODE SELECTOR to BATT TEST position. The meter pointer must indicate within BATTERY GOOD range, if not recharge.

Connect a Voltmeter between TP-3 (+) and ground (-), check for 6 VDC. If not, adjust for 6 VDC +/- 0.01 VDC.

8.3.4 After allowing for five minute warm up, turn MODE SELECTOR switch to ppm x 100 position and adjust R-13 for meter pointer indication of scale zero.

8.3.5 Turn MODE SELECTOR switch to ppm x 10 position and adjust COARSE ADJUST or meter pointer indication of scale zero. Readjust per steps 4 and 5 until meter pointer indicates a relatively constant scale zero when

MODE SELECTOR is switched between ppm x 100 range.

8.3.6 Turn MODE SELECTOR switch to ppm x 10 position. Reconnect gas transfer assembly to TLV sample inlet fitting. Open regulator valve (clockwise) and adjust for flowmeter indications of (1) cfh to ensure adequate pump flow. Allow one minute for meter pointer to achieve maximum indication, adjust R-3 the x10 span adjuster until meter pointer indicates mid-scale (50) or 500 ppm. Remove gas, close regulator valve (fully CCW) and allow about two minutes for meter pointer to return to zero.

8.3.7 Turn MODE SELECT switch to ppm x 10 position. Then turn the FINE ZERO ADJUST until meter pointer indicates full scale 1000 ppm. Turn MODE SELECT switch to ppm x 100 position and adjust R-4 the x 100 span adjuster until meter pointer indicates scale zero.

8.3.8 Turn MODE SELECT switch to ppm x 10 position, then turn FINE ZERO ADJUST until meter pointer indicates 10 in the scale or 100 ppm.

8.3.9 Turn MODE SELECT switch to ppm x 1 position and adjust the x 1 span adjuster until meter pointer indicates 100 (full scale) or 100 ppm.

8.3.10 Turn FINE ZERO ADJUST until meter pointer indicates scale zero, the TLV is now calibrated and ready for use on the low range 0-100 ppm as a gas leak detector.

8.4 Resetting alarm response. If factory set alarm response at midpoint of the meter scale is not suitable, reset alarm response level as follows:

8.4.1 Turn meter zero coarse adjustment screw (located under ZERO ADJUST control knob at lower left on instrument panel) to set meter pointer to desired alarm point on meter scale.

8.4.2 Turn ALARM potentiometer adjustment screw until audible alarm sounds.

8.4.3 Turn meter zero coarse adjustment screw to return pointer to zero on meter scale.

8.5 Setting recording level. If recorder (range: 0-100 mv; impedance: 10,000 lhms or greater) is to be used, attach accessory recorder jack to RECORDER plug in right side of instrument case and set recording level as follows:

8.5.1 Set MODE SELECTOR knob to ppm x 100 or ppm x 10 as desired and apply combustible gas to instrument intake.

8.5.2 Turn RECORDER potentiometer adjustment screw until accessory recorder response corresponds with meter readings as desired.

**9.0 QUALITY CONTROL**

9.1 Calibration of the unit should be verified each day.

9.2 Duplicate samples are tested in each pre-acceptance sample batch or every 10 samples, whichever is more frequent. A quality control chart is kept on the duplicate sample values.

**10.0 MONITORING TOXICITY**

10.1 Monitor combustible gas and vapor to determine concentrations with respect to Threshold Limit Values as follows:

10.1.1 Turn MODE SELECTOR control knob to BATT TEST position and read condition of battery on meter dial. Install new recharged batteries, if necessary.

10.1.2 Turn MODE SELECTOR control to desired operating range, selected in accordance with the Threshold Limit Value for the toxic gas to be monitored (ppm x 1 for TLV from 0 to 100 ppm; ppm x 10 for TLV from 0 to 1,000 ppm; ppm x 100 TLV from 0 to 10,000 ppm).

10.1.3 Allow ten minute warm-up period with instrument in same position as it is to be used in service (meter facing up or meter facing to the side).

10.1.4 In fresh air before entering monitoring area, turn ZERO ADJUST control knob until meter pointer resets on zero.

10.1.5 For monitoring in noisy areas, insert jack of accessory earphone in plug on right side of instrument case.

10.1.6 Enter monitoring area and read ppm gas concentrations on meter. Audible warning sounds if gas concentration causes readings at midpoint of scale or above, or if toxic Threshold Limit Value has been exceeded, provided the alarm has been set for this response.

10.1.7 For readings above 10,000 ppm: Replace probe assembly 0023-7243 with dilution probe 0023-7355 and slide dilution probe 0-ring to expose dilution holes of probe (extends range 10 x to read up to 100,000 ppm). Add in line filter and trap assembly, if sampling in dust or moisture laden areas.

10.2 Converting Hexane-calibrated meter ppm readings to ppm readings for other gases. Hexan gas is commonly used for factory calibration and subsequent in service recalibrations of the TLV Sniffer. To determine ppm concentrations of gases other than hexane with instruments calibrated for hexane, multiply the ppm meter reading by the factor for the gas detected.

10.3 Converting ppm readings to percent level of lower explosive limit (% L.E.L.). To determine gas concentration levels in terms of percent of lower explosive limit from direct ppm readings for hexane or from calculated ppm concentration levels for other gasses:

10.3.1 Read ppm on TLV Sniffer indicating meter.

10.3.2 On 0-to-10,000 "ppm concentration in sample" horizontal scale at bottom of % L.E.L. Conversion chart (attached), locate position left to right representing ppm reading.

10.3.3 On slanted chart line representing kind of gas detected, find the point in vertical alignment over ppm reading point on horizontal scale.

10.3.4 Locating gas leak sources. To utilize the TLV Sniffer in searching for gas leaks in tanks, pipes, hoses, containers, etc.:

10.4.1 Set MODE SELECTOR control knob to ppm x 1 position.

10.4.2 Search for exact location of leak with probe. Meter reading will increase as leak is approached and decrease as probe moves away from leak.

10.5 TLV sniff test procedure for sample fingerprint analysis.

10.5.1 The TLV sniffer probe is held over the surface (within 0.5 cm) of the sample. A positive reading indicates the possibility of volatile organics in the sample.

10.5.2 A reading over 200 ppm indicates the possibility of flammability and a flash point analysis is performed to test for flammability.

## 11.0 CALCULATIONS

TLV = ppm reading x scale

## 12.0 DATA FLAGGING AND REMEDIAL ACTION

12.1 Data will be flagged if:

12.1.1 Data generated creates an "out of control" situation on the precision control chart.

12.2 Remedial Action

12.2.1 When the data is flagged, the following areas are reviewed by the analyst and supervisor:

12.2.1.1 Analysis trends as indicated by control charts.

12.3 When a problem is located sample analysis is repeated.

## 13.0 REFERENCES

Instruction Manual TLV Sniffer, United Technologies Bacharach, Instruction 23-9613, Rev. No. 1, September, 1982.

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 6

(USPCI - 6)

OXIDIZER SCREEN

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 6

(USPCI - 6)

OXIDIZER SCREEN

## 1.0 SCOPE AND APPLICATION

This method is a rapid qualitative method for determining the presence of oxidizing materials in liquids and sludge samples.

## 2.0 SAFETY

2.1 Wear appropriate gloves and safety glasses when handling hazardous samples.

2.2 Perform analysis in the hood to prevent contact with sample vapors.

## 3.0 PROCEDURE

Wet a strip of KI - starch paper in HCl. Dip the wetted strip into the sample. Note the color that develops. Anywhere from light brown to dark purple or black indicated that oxidizing material is likely present. Light brown is generated on contact with nitric acid and deep purple forms on contact with hydrogen peroxide.

## 4.0 QUALITY CONTROL

At least one duplicate must be analyzed per sample set or for every 10 samples, which ever gives the greater frequency.

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 7

(USPCI - 7)

RADIOACTIVITY SCREEN

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 7

(USPCI - 7)

RADIOACTIVITY SCREEN

## 1.0 SCOPE AND APPLICATION

This method is to detect the presence of any radioactive material in a representative sample of waste.

## 2.0 SUMMARY OF METHOD

To detect and measure the presence of radioactivity in a sample it will be placed within six inches of a scintillation detector. A scintillation detector is capable of measuring low-level gamma radiation in micro R/hr.

## 3.0 INTERFERENCE

No known interferences.

## 4.0 SAFETY

Treat all samples as if hazardous. Wear appropriate gloves, safety glasses, and lab coat. The sample container does not have to be opened to perform the test.

## 5.0 APPARATUS AND EQUIPMENT

Ludlum Model 19 Micro Rad Meter, or equivalent.

## 6.0 REAGENTS

None required.

## 7.0 SAMPLE HANDLING AND PRESERVATION

No preservation is needed. Keep sample tightly sealed. Place entire sample within six inches of the detector.

## 8.0 CALIBRATION AND STANDARDIZATION

The meter is to be recalibrated annually by the manufacturer.

**9.0 QUALITY CONTROL**

None.

**10.0 PROCEDURE**

10.1 Prior to turn-on, place the response switch in the S (slow) position and place audio switch in the off position.

10.2 Turn-on the meter by placing meter on the 0 to 50 micro R/hr scale.

10.3 Depress the BATT Test Button. If the meter pointer is below the check line replace the meter's batteries.

10.4 Depress the R (reset) Button. Check to see if meter pointer returns to Zero.

10.5 The meter is ready for use. Allow the meter to return to background activity approximately 10 to 20 micro R/hr Response time should be 10 to 15 seconds.

10.6 Place sample within six inches of the detector located in the front of the meter. Allow 10 to 15 seconds for meter response. If reading is less than 40 micro R/hr above background the test is negative. Any readings which are greater, the General Manager or Lab Manager will be notified.

**11.0 CALCULATIONS**

The meter is a direct readout. Ensure meter is set on the proper scale.

**12.0 PRECISION AND ACCURACY**

No historical data is available at this time.

**13.0 DATA FLAGGING AND REMEDIAL ACTION**

13.1 Data will be flagged by the analyst if readings exceed 40 micro R/hr above background.

**14.0 REFERENCES**

<u>Instruction Manual for Ludlum Model 19 MICRO R Meter</u>, Ludlum Measurement Inc., Sweetwater, Texas.

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURES 8

(USPCI - 8)

FIXATION REQUIREMENT
(RECIPE)

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 8

(USPCI - 8)

FIXATION REQUIREMENTS
(RECIPE)

## 1.0 SCOPE AND APPLICATION

This test is for determining the amount of reagents (fly ash, cement kiln dust, lime, cement, silicate based reagents, activated carbon, water, etc...) that must be added to waste streams containing free liquids to stabilize the waste stream or to pass treatment standards.

## 2.0 SUMMARY OF METHOD:

A weighed amount of sample is mixed while slowly adding reagent(s) until no free liquids can be seen. The mixture is then weighed and the ratio of sample to reagent(s) is recorded. The mixture is then subjected to the Paint Filter Liquids Test (Methods 9095), more reagent(s) is (are) added until the Paint Filter Liquid Test indicates no free liquids. The final ratio of reagent to sample is the one used for waste stream stabilization prior to disposal. To determine if the mixture meets the treatment standard, the mixture must be subjected to the appropriate test procedure.

## 3.0 SAFETY

Wear appropriate gloves and safety glasses when handling samples.

## 4.0 PROCEDURE:

4.1 Weigh approximately 25 grams of sample into a 50 ml disposable beaker.

4.2 Gradually add reagent(s) and mix until no free liquids are observed. Weigh mixture.

4.3 Subject mixture to Paint Filter Liquids Test (Method 9095) or to TCLP if the mixture is to meet CCWE treatment standards.

4.4 Add more reagent(s) if free liquids are found with method 9095.

4.5 Determine final ratio of reagents(s) to sample for adequate fixation of free liquids or to meet treatment standards.

**5.0 QUALITY CONTROL**

5.1 Duplicate samples are run for 1 sample in 10.

5.2 Quality control charts are kept to indicate the method precision on duplicate samples.

**6.0 REFERENCES**

SW-846 Method 9095 40 CFR Part 268

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 10

(USPCI - 10)

REDUCER SCREEN

~~ck line replace the met~~

batteries.

10.4 Depress the R (reset) Button. Check to see if meter pointer returns to Zero.

10.5 The meter is ready for use. Allow the meter to return to background activity approximately 10 to 20 micro R/hr Response time should be 10 to 15 seconds.

10.6 Place sample within six inches of the detector located in the front of the meter. Allow 10 to 15 seconds for meter response. If reading is less than 40 micro R/hr above background the test is negative. Any readings which are greater, the General Manager or Lab Manager will be notified.

## 11.0 CALCULATIONS

The meter is a direct readout. Ensure meter is set on the proper scale.

## 12.0 PRECISION AND ACCURACY

No historical data is available at this time.

## 13.0 DATA FLAGGING AND REMEDIAL ACTION

13.1 Data will be flagged by the analyst if readings exceed 40 micro R/hr above background.

## 14.0 REFERENCES

Instruction Manual for Ludlum Model 19 MICRO R Meter, Ludlum Measurement Inc., Sweetwater, Texas.

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURES 8

(USPCI - 8)

FIXATION REQUIREMENT
(RECIPE)

**~~Safety-Kleen (Wichita) Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 8**

**(USPCI - 8)**

**FIXATION REQUIREMENTS (RECIPE)**

## 1.0 SCOPE AND APPLICATION

This test is for determining the amount of reagents (fly ash, cement kiln dust, lime, cement, silicate based reagents, activated carbon, water, etc...) that must be added to waste streams containing free liquids to stabilize the waste stream or to pass treatment standards.

## 2.0 SUMMARY OF METHOD:

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**5.0 QUALITY CONTROL**

5.1 Duplicate samples are run for 1 sample in 10.

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**6.0 REFERENCES**

SW-846 Method 9095 40 CFR Part 268

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 10

(USPCI - 10)

REDUCER SCREEN

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 10

(USPCI - 10)

REDUCER SCREEN

**1.0 SCOPE AND APPLICATION**

This method provides a spot test for the presence of reducing agents in a sample. This is a screening method value rather than a quantified result using a colorimetric method. It provides a POS/NEG result.

**2.0 SUMMARY OF METHOD**

A small amount of sample (with the pH adjusted to < 8) is placed in a test tube containing $I_2$ starch solution. If a reducer is present, the blue color of the indicator will fade.

**3.0 SAFETY**

3.1 Wear gloves/safety-glasses.

3.2 Perform test in a hood to vent any possible fumes from sample and/or acetic acid.

3.3 Use caution handling glacial acetic acid.

**4.0 INTERFERENCES**

No interferences are anticipated. However, strong bases will cause a false positive result. It is very important to adjust pH.

**5.0 REAGENTS**

5.1 Glacial acetic acid - ACS Grade, for adjusting pH.

5.2 Reducing agent indicator.

5.2.1 Place 500 ml deionized water in a 1000 ml beaker and heat just short of boiling. Remove from heat.

5.2.2 Add 5 gm soluble starch and stir until all of the starch is dissolved.

5.2.3 Dilute starch solution 1:1 with deionized water. Allow to cool to room temperature.

5.2.4 Add 1 gm of elemental iodine to 50 ml of ethyl alcohol. Stir until all the iodine is dissolved.

5.2.5 After starch is cool, add 10 ml of iodine solution to starch. Place this mixture in a dark bottle and store in a dark place.

**6.0 PROCEDURE**

6.1 A starch solution produces a deep blue color in the presence of elemental iodine. A reducing agent present in a sample will donate an electron to the iodine and clear the solution.

6.1.1 Transfer 1 gm of sample to a 55 ml disposal beaker.

6.1.2 Add 10 ml deionized water.

6.1.3 Adjust the pH to < 8 with 1:1 acetic acid.

6.1.4 Add 20 ml indicator to another 55 ml beaker.

6.1.5 Add 10 drops of the pH adjusted sample solution to the beaker of indicator.

6.1.6 The blue color will fade if a reducing agent is present.

**7.0 QUALITY CONTROL**

7.1 Samples should be tested in duplicate at a frequency of not less than 10%.

7.2 A positive can be found using a solution of sodium thiosulfate.

**8.0 REFERENCES**

Standard Methods for Examination of Water and Wastewater, 16th Ed.

Analytical Chemistry, 4th Ed,. Gary Christian.

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 11

(USPCI - 11)

EXTRACTION FOR SOLIDS

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC
Analytical Procedures

USPCI-11.1

August 14, 1998

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 11

USPCI - 11

# EXTRACTION FOR SOLIDS

## 1.0 SCOPE AND APPLICATION

1.1 This method is used in the screening of waste samples for high levels of organic halides. This method is primarily used to screen solvents, although some semi-volatiles (bp> 200° C) will be detected. Heavier PCBs do not extract well with polar solvents.

1.2 Methanol is the current solvent and yields good (>90%) matrix spike recoveries. Other solvents can be used provided they yield adequate spike recoveries.

## 2.0 METHOD SUMMARY

A nominal 1 gram sample of waste is extracted with methanol using physical agitation.

## 3.0 INTERFERENCES

The TOX analyzer is relatively interference free.

## 4.0 SAFETY PRECAUTIONS

Waste samples can contain extreme levels of hazardous compounds. The analyst should be acquainted with the waste stream and take precautions consummate with the potential risk.

## 5.0 APPARATUS AND EQUIPMENT

5.1 25 ml Septum capped vial, or equivalent.

5.2 Sample Agitator (optional).

**6.0 REAGENTS**

Methanol, interference free, or equivalent.

**7.0 SAMPLE HANDLING AND PRESERVATION**

7.1 Samples should be extracted in a timely manner. No holding time exists for samples of this type. No preservative is required.

7.2 It is recommended that extracts not to be analyzed within 7 days be stored at $4^{\circ}C \pm 2^{\circ}C$. Extracts should not be stored more than 30 days.

**8.0 CALIBRATION AND STANDARDIZATION**

For details of instrument calibration, see the applicable parts of the QA Plan (Instrument Calibration).

**9.0 PROCEDURE**

9.1 Obtain the tare weight of a 25 ml vial.

**NOTE:** All weights in this method are to be recorded to the nearest 0.01 grams, unless otherwise noted.

9.2 Add a nominal 1 gram of sample and record the gross weight.

9.3 Add 10 ml of methanol to the sample and agitate for 1 minute.

**10.0 SAMPLE CALCULATIONS**

Quantity of TOX is expressed as mg/kg TOX (as chloride).

Sample concentration is:

$$\text{mg/kg TOX} = \frac{(\text{ug TOX}) \times (\text{ml Extract}) \times 1000}{(\text{ul injected}) \times (\text{gm sample})}$$

**11.0 QUALITY CONTROL**

11.1 Method Blank - A method blank should be analyzed at a minimum frequency of 10% or 1 per extraction batch.

11.2 Matrix Spike/Matrix Spike Duplicate (MS/MSD) - an MS/MSD will be run at a minimum frequency of 10%.

11.2 2,4,6-Trichlorophenol will be used as the spiking compound. A solution independent of the calibration standard will be used.

**12.0 METHOD PERFORMANCE**

12.1 Method spike recoveries should be between 75% - 125%.

12.2 Method duplicate precision should be <30% RPD.

**13.0 REFERENCES**

Waste dilution, Method 3580, SW-846

Sonification extraction, Method 3550, SW-846

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 21

(USPCI - 21)

RADIANT HEAT IGNITION TEST PROCEDURE

(IGNITABLE SOLIDS SCREEN)

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 21

(USPCI - 21)

RADIANT HEAT IGNITION TEST PROCEDURE

(IGNITABLE SOLIDS SCREEN)

**1.0 SUMMARY OF METHOD**

A sample is placed 6 cm beneath a preheated radiant heat source and the time to ignition is detected by a thermocouple sensor and recorded on a strip chart recorder.

**2.0 APPARATUS AND REAGENTS**

2.1 Test chamber - as shown in Figure 1.

2.2 Sample container - aluminum weighing pan, 6 cm diameter x 1.7 cm deep.

2.3 Controller/sensor - as shown in figure 1.

2.4 Recorder - strip chart, variable speed and input impedance.

2.5 Safety Equipment

2.5.1 Flameproof gloves (Lab Safety Supply 1915M or equivalent)

2.5.2 Tongs - 53 cm (Fisher, 15-207 or equivalent)

2.5.3 Respirator (Fisher, 13-995-11 or equivalent)

2.6 Balance (minimum accuracy to nearest 100 mg)

**3.0 TEST PROCEDURE**

3.1 Locate the test chamber in a fireproof fume hood with the exhaust fan turned on.

3.2 If the hood is large enough, locate the controller/sensor and the recorder outside the hood but in proximity to the test chamber.

3.3 With an empty sample container on the sample platform to provide a heating element (Figure 1: part no. 1) to sample container (top rim) distance of 6 cm.

3.4 Position the thermocouple (Figure 1; part no 7) 1 cm above the top rim and centered over the sample container.

3.5 Connect the thermocouple to position 33 (Figure 1) on the controller/sensor using the cable supplied.

3.6 Connect the heater/solenoid cable (Figure 1: part no. 16, 17) to position 34 (Figure 1) on the controller/sensor.

3.7 Connect the power cord on the controller/sensor to a 110 VAC power source.

3.8 Set the variable transformer to 0.

3.9 Position a dummy sample container (blackened with carbon soot) directly under heat source. Close the chamber door.

3.10 Turn on the controller/sensor.

3.11 Turn on the heater. Set the variable transformer to the setting determined during the temperature adjustment procedure.

3.12 Preheat the radiant heat source for 30 minutes.

3.13 Transfer sample to the sample container to a depth of approximately 1 cm, making sure that the sample surface is level and smoothed.

**WARNING!!**

**Extreme care must be exercised in testing materials known or suspected of being highly flammable. Preliminary test using greatly diminished sample sizes should be conducted prior to performing the actual test to insure the safety of the analyst. A reduced test sample depth should be used in cases where sample ignition is extremely rapid and/or violent.**

3.14 Place the filled sample container outside, but in proximity to, the test chamber.

3.15 Start the recorder at a chart speed of 0.5 in/min and a full-scale sensitivity of 1 volt.

3.16 Open the side door and remove the dummy sample container.

3.17 Using tongs and flameproof gloves, pick up the filled sample container and place it onto the metal trough. With the tongs, slide the sample container under the radiant heat source. Immediately, close the side door and activate the recorder zero knob to mark the chart.

**CAUTION!!**

**The placement of the sample beneath the radiant heat source, the marking of the recorder chart and the closing of the chamber door must be executed as quickly as possible to optimize the precision of the test results.**

3.18 Raise the chamber door and remove the ignited sample from beneath the radiant heat source and carefully place it in the bottom of the chamber.

**WARNING!!**

**Raise the fume hood and test chamber doors just to a level that facilitates removal of the sample form beneath the radiant heat source. Flameproof gloves should be used in combination with tongs to protect the analyst from the burning sample.**

3.19 Extinguish the fire by smothering.

3.20 Prepare the chamber for the next sample by positioning the dummy sample container beneath the radiant heat source.

3.21 Lower the fume hood door to one-half the height of the chamber.

3.22 Measure the distance (cm) from the initial mark to ignition on the recorder. Calculate the time to ignition from the calibrated recorder speed.

3.23 Proceed with the analysis of subsequent samples by repeating steps 3.13 through 3.22

~~Safety_Kleen ( Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL

PROCEDURE 25

(USPCI-25)

COMPATIBILITY EVALUATIONS

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 25

(USPCI-25)

# COMPATIBILITY EVALUATIONS

## Compatibility Evaluations:

Two evaluation procedures are discussed below, the first dealing with determination of waste to waste compatibility, and the second with waste to container or tank materials of construction compatibility.

## Waste to Waste Compatibility Evaluation:

The determination of whether, or not, two wastes are compatible may involve up to three levels of evaluation. The first level will rely on a review of the results of previous compatibility determinations for the wastes under evaluation. If a compatibility determination cannot be made from a review of previous evaluations, a second level of evaluation will be employed.

This second level will involve a review of analytical data on file for the wastes under evaluation and a search of appropriate literature and/or the use of "Compatibility Charts" to assess the potential for the waste streams to be compatible. Sources of information would include 40 CFR 264, Appendix V, Example of Potentially Incompatible Wastes; or "A Method For Determining The Compatibility of Hazardous Wastes", EPA- 600/2-80-076, April 1980. If a determination about compatibility cannot be made after reviewing the procedures above, a third level of evaluation will be employed.

The third level of evaluation will require that a laboratory test procedure be performed, in which samples of the wastes are mixed and observed for signs of adverse reaction. The Technical Manager will not be required to perform all three levels of evaluation, but may opt to begin the evaluation at level two or at level three. If a determination is made that wastes are incompatible, the wastes will be segregated during storage at ~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC If the laboratory test procedure indicates that the waste streams are compatible, then these waste streams may be mixed during storage regardless of the results of the determinations made at level one or level two.

**Waste to Waste Compatibility Testing Procedure**

**General Safety Precautions:**
At a minimum, laboratory personnel will wear safety glasses, gloves, protective clothing, and protective footwear while performing the tests for waste compatibility. The tests will be perfomed under a lab fume hood. Laboratory personnel will check the manifest and other shipping documents to be familiar with the wastes and ensure that all necessary precautions are taken.

**Detailed Procedure:**

- Place a clean beaker in a fume hood.
- Add 100 - 150 ml of a representative sample of waste stream "A" (one of the wastes to be mixed or which may come into contact during storage).
- Add 100 - 150 ml of a representative sample of waste stream "B" (the other wastes to be mixed or which may come into contact during storage) to the same beaker.
- Check for these typical signs of reactivity:
  - gas generation (method: visual inspection)
  - temperature change (method: thermometer)
  - violent reactions (method: visual or audible inspection)
  - fire/explosion (method: visual or audible inspection)
- If a reaction exhibiting one or more of the above characteristics occurs, the waste streams will be deemed incompatible and will not be stored together or mixed together in a tank or container.

## Waste to Tank or Container Compatibility Evaluation:

The evaluation of whether, or not, a waste is compatible with the tank or container into which it is desired to place the waste is based on determining the potential of the waste to corrode the materials of construction of the tank or container. As many of the tanks at ~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC are of carbon steel construction, the evaluation focuses on the potential of wastes to corrode carbon steel.

Prior to storing a waste in a tank or in a container fabricated of carbon steel, the waste will be checked for compatibility with carbon steel. A pH analysis and Table WC.1 will be used to determine the compatibility of the waste sample.

If the pH is determined to be less than or equal to 2.0 or equal to or greater than 12.5, (<=2.0, pH, =>12.5) and thus exhibits the regulatory characteristic of corrosivity, then the waste will not be stored in direct contact with carbon steel.

If the pH of the waste is determined to be greater than 2.0 and less than 12.5 (2.0 < pH < 12.5), then a review of the Waste Profile Sheet for the presence of any compounds listed in Table WC.1 will be performed. Table WC.1 was developed by LES after reviewing published sources and compiling a list of compounds (with corresponding concentrations) that corrode carbon steel at a rate greater than 0.05 inches per year at temperatures from 0° to 130° F. It should be noted that this rate of corrosion is only 20% of the rate at which a waste would meet the characteristic of corrosivity.

If the Waste Profile Sheet indicates that the concentration of a compound exceeds the level indicated in Table WC.1, the waste will not be treated or stored in carbon steel tanks (uncoated) or stored in a container made of carbon steel (unlined). Such a waste may be placed in a fiberglass reinforced plastic tank or a container furnished with a corrosion resistant lining.

Compatibility sources utilized include The Chemical Engineer's Handbook, Perry and Chilton, 5th ed., pg. 23-16 to 23-34, 1973; Engineering Materials Handbook, Mantell, 38-1 to 38-19, 1958.

## Table WC.1
## Compatibility of Waste with Carbon Steel[1]

| Compound | Concentration (volume %) - (C) | Temperature Range (deg F) - T |
|---|---|---|
| acetic acid | 5 < C < 100 | T > 60 |
| chromic acid | 5 < C < 20 | T > 60 |
| citric acid | 10 < C < 40 | T > 60 |
| formic acid | C > 25 | T > 60 |
| hydrochloric acid | C > 5 | T > 60 |
| hydrofluoric acid | 10 < C < 60 | T > 60 |
| nitric acid | C > 5 | T > 60 |
| oxalic acid | 7 < C < 13 | T > 60 |
| phosphoric acid | C > 5 | T > 60 |
| sulfuric acid | 10 < C < 90 | T > 60 |
| aluminum chloride | 10 < C < 90 | T > 60 |
| aluminum potassium sulfate | 7 < C < 13 | T > 60 |
| ammonium chloride | 20 < C < 30 | T > 60 |
| aniline | 100 | T > 60 |
| calcium hypochlorite | 100 | T > 60 |
| copper sulfate | 5 < C < 100 | T > 60 |
| fatty acids | 100 | T > 60 |
| ferric chloride | 10 < C < 45 | T > 60 |
| ferrous chloride | 10 < C < 25 | T > 60 |
| ferrous sulfate | 7 < C < 13 | T > 60 |
| hydrogen peroxide | 15 < C < 50 | T > 60 |
| nickel sulfate | 10 < C < 100 | T > 60 |
| potassium hydroxide | 35 < C < 50 | T > 100 |
| sodium chloride | 100 | T > 100 |
| soduim hydroxide | 45 < C < 75 | T > 100 |
| zinc chloride | 10 < C < 65 | T > 50 |
| zinc sulfate | 10 < C < 35 | T > 50 |

**NOTE:** Compounds listed above are corrosive to carbon steel at a rate greater than 0.05 inches per year at the given concentrations and temperatures. Many of the concentrations given do not fall within the pH constraints set for the compatibility of the waste with the carbon steel tanks. Therefore, consideration for compliance with the above table for waste streams that do not fall within the pH requirements set will not be required.

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC **ANALYTICAL PROCEDURE 1**

**(HRIW - 1)**

**EXPLOSIVITY SCREEN**

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC **ANALYTICAL PROCEDURE 1**

**(HRIW - 1)**

**EXPLOSIVITY SCREEN**

## 1.0 SCOPE AND APPLICATION

An organic vapor analyzer is used to determine the concentration of organic vapors in air. For the purpose of this method, the air in question will be the headspace above liquid or solid waste samples.

## 2.0 SUMMARY OF METHOD

2.1 A portable gas detection unit is used to determine concentrations of oxygen (as % $O_2$) or combustible gases (as ppm or % LEL) in the atmosphere. Sample vapors are drawn across a combustible gas detector (Wheatstone bridge), through the pump, to flow across an oxygen detector and vent to the outside. Readings obtained are displayed on either an analog meter dial or a digital display.

## 3.0 INTERFERENCES

3.1 Humidity can effect the reading obtained in the low ppm range.

3.2 Certain substances, particularly silicone vapors, act as "catalyst poisons" and can result in decreased sensitivity.

3.3 Chlorinated vapors will give a catalytic response although they are not truly flammable.

3.4 Since acetylene is very active catalytically it may tend to give a reaction at the reference element, thereby nullifying the signal from the active element.

3.5 When sampling spaces which are warmer than the instrument, water vapor can condense in the sample line, blocking the flame arrestor and interfering with pump operation.

4.0 **SAFETY**

4.1 The electric circuitry of the unit is certified to be intrinsically safe and can be safely used in testing any mixture of combustible gas in air.

4.2 Safety glasses, lab coat, and chemically resistant gloves should be worn while handling laboratory samples.

5.0 **APPARATUS AND EQUIPMENT**

5.1 GasTechtor model #1314 Hydrocarbon Super Surveyor equipped with a 10 inch probe and hose sample inlet system, or equivalent.

5.2 Calibration gas with known ppm levels of a hydrocarbon.

6.0 **SAMPLE HANDLING AND PRESERVATION**

Keep samples tightly capped and analyze as soon as possible to prevent the escape of vapors.

7.0 **CALIBRATION AND STANDARDIZATION**

7.1 Press the power switch to turn the instrument on. Press the battery check button and note the meter reading. The reading must be above the BATT CK mark on the meter for use. If not, the meter must be recharged.

7.2 Setting the LEL span.

7.2.1 Expose the sample probe tip to a known calibration gas.

7.2.2 Locate the LEL SPAN potentiometer on the underside of the circuit board inside the unit, along one edge, near the front.

7.2.3 Watch the combustibles display carefully, and adjust the reading to the desired value by turning the potentiometer. Turn the potentiometer clockwise to increase the reading.

7.2.4 Remove the calibration gas and allow the reading to return to zero. If the reading does not return to zero repeat the above steps until the correct reading is obtained.

7.2.5If reading cannot be set high enough, replace the detector.

7.3 Setting the Oxygen zero.

7.3.1 Expose the sample probe tip to a known oxygen-free sample, such as nitrogen, argon, or helium.

7.3.2 Locate the ZERO potentiometer, along the front edge of the circuit board.

7.3.3 Watch the display carefully, and, if necessary, adjust the reading to zero by turning the ZERO potentiometer.

7.3.4 If zero adjustment cannot be made, have the oxygen cell reactivated.

7.4 There is no separate field adjustment needed for the PPM span. The relationship between LEL and PPM sensitivity is precalculated and set at the factory.

**8.0 PROCEDURE**

8.1 Turn the instrument on and allow to warm up in ambient air. The unit may be used when warm up is complete (usually about 2 minutes), but full stabilization of the readings may take up to 20 minutes.

8.2 Laboratory readings are reported in ppm, therefore make sure that the LEL/PPM button is in the PPM position.

8.3 Unscrew the lid of the sample jar and tilt it only enough to allow the probe to enter the headspace over the sample. Read and record the highest reading shown on the meter.

**9.0 QUALITY CONTROL**

9.1 Calibration should be verified daily using a gas with known ppm levels of a hydrocarbon to ensure accuracy of results.

9.2 Replicate readings should be taken on samples at a frequency of at least 20% to ensure precision of results.

**~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 2**

**(HRIW - 2)**

**HOC SCREEN**

**~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 2**

**(HRIW - 2)**

**HOC SCREEN**

**1.0 SCOPE AND APPLICATION**

The Bielstein test provides an easy and reliable screen for detecting the presence of organic halogens in a sample. The test does not differentiate between chlorine, bromine, and iodine. Fluorine does not produce a positive result.

**2.0 SUMMARY OF METHOD**

When an organic halogen is heated with copper oxide the result is the production of a volatile copper halide which imparts a blue-green color to the flame. Two methods are given here, one for volatile compounds and one for non-volatile compounds, differing only in the way that the sample is introduced into the flame.

**3.0 INTERFERENCES**

3.1 Very volatile liquids may evaporate before the test is complete.

3.2 Several non-halogenated compounds have been stated to also cause a green flame, such as organic acids, copper cyanide, urea, quinoline, and pyridine derivatives.

**4.0 SAFETY**

4.1 Since this method utilizes an open flame, caution must be used around flammable solvents and materials.

4.2 Safety glasses, lab coat, and chemically resistant gloves should be worn while handling laboratory samples.

**5.0 APPARATUS AND EQUIPMENT**

5.1 Propane refrigerant sniffer (Freon leak detector).

5.2 For non-volatile compounds, a 20 gauge wire with a small loop in the end.

## 6.0 SAMPLE HANDLING AND PRESERVATION

All samples should be kept in containers with a tight, leakproof cap.

## 7.0 PROCEDURE

7.1 Volatile compounds.

7.1.1 Ignite the leak detector and allow the copper disk inside the burner to become red hot.

7.1.2 Unscrew the lid of the sample jar and place the aspirator tube into the headspace above the sample. If halogen is present, the flame will burn green to blue-green.

7.1.3 Highly volatile hydrocarbons which are not halogenated may cause the flame to burn more vigorously and bright yellow in color. This should not be confused with a positive result.

7.2 Non-volatile compounds.

7.2.1 Ignite the leak detector. Hold the looped end of the copper in the flame and burn off any residue. Cool the wire.

7.2.2 Unscrew the lid of the sample jar and dip the wire into the sample. Immediately plunge the wire into the flame. After the sample burns, note the color change in the flame. If halogen is present, the flame will have a green color.

## 8.0 QUALITY CONTROL

Test daily with a one percent solution of trichloroethylene in methanol. A positive test should be seen for either method.

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 3

(HRIW - 3)

IGNITABILITY OF SOLIDS

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ANALYTICAL PROCEDURE 3

(HRIW - 3)

IGNITABILITY OF SOLIDS

## 1.0 SCOPE AND APPLICATION

This method is used to determine the susceptibility of a solid or semi-solid waste to ignition by a spark source or open flame.

## 2.0 SUMMARY OF METHOD

Sparks from a flint lighter or an open flame are introduced to the headspace above a sample of solid waste, and observation is made for either a flash in the vapor space or ignition of the sample.

## 3.0 SAFETY

3.1 Since this method utilizes an open flame, caution must be used around flammable solvents and materials.

3.2 Safety glasses, lab coat, and chemically resistant gloves should be worn while handling laboratory samples.

## 4.0 APPARATUS AND EQUIPMENT

4.1 Flint lighter, wooden or paper matches, or other source for sparks or flame.

4.2 A 300 mL beaker, or a similar container of adequate size to accomodate the sample with vapor space.

4.3 A watch glass of adequate size to cover the mouth of the beaker.

4.4 A timer or stop watch.

## 5.0 SAMPLE HANDLING AND PRESERVATION

All samples should be kept in containers with a tight, leakproof cap.

## 6.0 PROCEDURE

6.1 Place approximately 100 mL of well-mixed sample into the beaker and cover with the watch glass.

6.2 Allow to stand closed for about five minutes.

6.3 Tilt the watch glass and carefully place the ignition source directly in the vapor space above the sample in the beaker. A flash in the vapor space or ignition of the sample itself indicates a positive test.

## 7.0 QUALITY CONTROL

The simple positive/negative nature of this screen does not lend itself to typical QA/QC measures. Suspect results should be repeated or verified by other methods.

# Attachment C-D

## Excerpts from "Samplers and Sampling Procedures for Hazardous Waste Streams"

INSERT 20 PAGES OF EXCERPTS FROM "SAMPLERS AND SAMPLING PROCEDURES FOR HAZARDOUS WASTE STREAMS.

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## List of Figures



## List of Tables



## List of Attachments



## Acronym Table

Waste Analysis Plan (WAP)
~~Safety-Kleen (Wichita), Inc. (SKW)~~Clean Harbors Kansas, LLC (CHK)
Kansas Administrative Regulations (KAR)
Resource Conservation and Recovery Act (RCRA)
Title 40 of the Code of Federal Regulations (40 CFR)
Polychlorinated Biphenyl (PCB)
Toxic Substances Control Act (TSCA)
American Society for Testing and Materials (ASTM)
Personal Protective Equipment (PPE)
American Public Health Association (APHA)
Environmental Protection Agency (EPA)
Waste Profile Sheet (WPS)
Quality Assurance/Quality Control (QA/QC)
National Institute of Standards and Technology (NIST)
Relative Percent Difference (RPD)

# WASTE ANALYSIS PLAN

## 1.0 Introduction: 40 CFR 270.14(b)(3), 40 CFR 264.13(b) and (c)

### 1.1 Purpose:

The purpose of this Waste Analysis Plan (WAP) is to establish sampling and analytical requirements for waste characterization, acceptance, storage, treatment or other management at ~~Safety-Kleen (Wichita), Inc. (SKW).~~Clean Harbors Kansas, LLC(CHK). This WAP fulfills the requirements of the Kansas Administrative Regulations (KAR), and 40 CFR Parts 261, 262, 264, 268, and 270. The KAR incorporate, with few additions, the RCRA regulations contained in 40 CFR Parts 260 through 270. Therefore, this section will refer only to the federal regulations.

The WAP is intended to be the primary reference document for waste analysis performed in conjunction with operation (and closure) of ~~Safety-Kleen(Wichita), Inc.~~Clean Harbors Kansas, LLC. The WAP addresses the following topics.

- Analytical parameters and rationale (Section 2.0).
- Analytical methods (Section 3.0).

- Sampling methods (Section 4.0).
- Pre-acceptance procedures (Section 5.0).
- Incoming load procedures (Section 6.0).
- Storage, treatment or other waste management activities (Section 7.0).
- Quality assurance and quality control (Section 8.0).

Any modifications to this Waste Analysis Plan will be made in accordance with 40 CFR 270.42.

## 1.2 Definitions:

The terms provided below, applied within the WAP, will have the following meanings.

- Analysis: The term "analysis" means any method by which the value of, or a range of values for, a particular parameter is determined. These methods may include laboratory procedures specified in Attachment C-C. If these procedures cannot be performed, the circumstances will be documented in the operating record and the value of, or range of values for, a particular parameter will be determined based on knowledge of the waste or of the process generating the waste.

Batch: The term "batch" will refer to some quantity of waste consisting of an individual waste stream or a mixture of waste streams which have been combined for the purpose of management at ~~Safeth-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC.

- Bulk Container: The term "bulk container" will mean any container as defined in 40 CFR 260.10 which has a capacity of greater than 450 gallons (e.g., an intermodal container, end-dump truck, gondola, tanker truck, etc.).

- Container: The term "container," without the qualifier "bulk," will have the same meaning as defined in 40 CFR 260.10.

- Hazardous waste: The definition of "hazardous waste" shall be as defined in 40 CFR 261.3.

- Incoming Load: The term "incoming load" refers to a waste shipment manifested to ~~SKW~~CHK Upon arrival, the shipment will be staged or placed in a CMU and will remain an incoming load until it is either rejected, trans-shipped to another location, or finally accepted for management at ~~SKW~~CHK

- Nonhazardous waste: "Nonhazardous waste" refers to "solid waste" as defined in 40 CFR 261.2 which is not "hazardous waste" as defined in 40 CFR 261.3. This may include solid waste such as "empty containers" as defined by 40 CFR 261.7, exempt solid and/or hazardous waste as defined by 40 CFR 261.4, sludge from Publicly Owned Treatment Works, household hazardous waste, garbage, refuse, etc.

- Parameter: The term "parameter" is a specific material property, such as pH, specific gravity, viscosity, etc., or a concentration of a particular constituent of the waste or material.

- PCB(s): The term "PCB(s)" refers to PCB(s) or PCB Item(s) as defined in 40 CFR Part 761.

- Pre-acceptance: The period in which a waste stream's acceptability for management at ~~SKW~~CHK is evaluated is referred to as "pre-acceptance".

- Radioactive: A "radioactive" material, or "regulated radioactive material," will mean any material as defined by 10 CFR 20.3 or by KAR 28-35-135.

- Solid Waste: The definition of "solid waste" shall be as provided in 40 CFR 261.2.

- Staging: The term "staging" refers to the temporary placement of containers during movement into or out of storage or processing areas. Staging generally occurs for a few hours, and will not exceed 72 hours (three days). Typical staging areas are loading and receiving areas and areas situated adjacent to processing units.

- Suitable Laboratory: A "suitable laboratory" is an analytical laboratory which meets the minimum quality assurance requirements as specified in this WAP, operates under a Quality Assurance/Quality Control

Plan, and uses appropriate SW-846 methods or methods listed in Attachment C-C. Analytical results submitted from off-site laboratories must certify what standard analytical methods were used to obtain the data. If non-standard methods (e.g., methods modified and approved for use at that laboratory) were used, documentation must be provided to support the validity of the data.

- Technical Manager: The "Technical Manager" refers to the individual, or a designee, responsible for implementation of the WAP.

- Transfer Facility: A transfer facility means any transfer related facility including loading docks, parking areas, storage areas and other similar areas where shipments of hazardous waste are held during the normal course of transportation for a period not to exceed 10 days, between the point of generation and the shipment destination. The transfer facility does not serve as the treatment, storage, or disposal location for that manifest, and is not identified on the manifest. A 10-day transfer facility has the same meaning in this document.

- Trans-Shipment: Trans-shipment is the temporary storage of wastes at the facility for the purpose of shipping the wastes to another facility without on-site processing. Trans-shipped wastes will be subject to the minimum incoming load procedures, and will be managed on-site in the same manner as all other wastes in storage.

- Typical Form: The "typical forms" provided in Attachment C-A are examples of forms currently in use at ~~SKW.~~ CHK. These forms may be revised as needed to respond to changes in regulations and recordkeeping procedures at ~~SKW.~~ CHK.

- Value of a Parameter: The "value of a parameter" will refer to the value or a range of values of a parameter as determined by analysis.

- Waste Stream: A "waste stream" will refer to wastes from a single generator with similar characteristics or originating from similar processes. Each waste stream will typically be identified for recordkeeping purposes by a unique number.

## 1.3 Identification of Wastes: 40 CFR 270.14(b)(2), 40 CFR 264.13(a)

### 1.3.1 Wastes Acceptable for Management:

Materials acceptable for management at ~~SKW~~CHK will include solid wastes and hazardous wastes. Attachment C-B contains a list of hazardous wastes which may be received at ~~SKW.~~CHK. The hazardous wastes listed in Attachment C-B are referred to by EPA Hazardous Waste Number and by Hazard Code. The Hazard Code is used by EPA to indicate if the waste is reactive (R), toxic (T), corrosive (C), ignitable (I), an acute hazardous waste (H), or whether the waste exhibits the Toxicity Characteristic (E). The basis for designating these wastes as hazardous is provided in 40 CFR Part 261, Appendix VII.

The wastes accepted at ~~SKW~~CHK will vary considerably in both composition and form. Various organic and inorganic constituents may be present in the wastes. Wastes will be liquid, solid or multiphasic. General waste descriptions include hazardous wastes of the following types: contaminated wastewaters, spent catalysts, electroplating wastes, metal-contaminated sludges, spent-solvent residuals, off-specification chemicals, and a variety of other waste types.

Each waste stream will be characterized prior to acceptance for management at the facility following the procedures described in Section 5.0. This pre-acceptance characterization will be used to determine the acceptability of waste streams for management at ~~SKW.~~CHK. Profiles and other analytical data (as required) are maintained in the operating record for three years or longer.

### 1.3.2 Waste Prohibited from Management:

Materials which will not be accepted for management at ~~SKW~~CHK include, but are not limited to, the following.

- Dioxin-containing hazardous wastes identified by EPA Hazardous Waste Numbers F020, F021, F022, F023, F026, F027 and F028.
- Regulated radioactive wastes and materials.
- Infectious medical wastes.
- TSCA regulated PCBs.

## 2.0 Analytical Parameters and Rationale: 40 CFR 264.13(b)(1) and (2)

### 2.1 Introduction:

A list of parameters has been developed for which each batch of waste will be analyzed. These parameters are referred to as "mandatory" parameters. Mandatory analyses will be performed on each incoming load of waste, except as discussed in Section 6.0. In addition to performing analysis for the mandatory parameters, the values or a range of values of other parameters may be determined at any time prior to, or during, management of the waste at ~~SKW~~CHK to more fully define the waste characteristics. These additional parameters will be determined at the discretion of the Technical Manager. Since these parameters are discretionary, they are referred to as "supplemental" parameters.

### 2.2 Mandatory Parameters:

#### 2.2.1 Mandatory Pre-acceptance Parameters:

Prior to acceptance at ~~Safety-Kleen (Wichita) Inc.,~~Clean Harbors Kansas, LLC, a hazardous waste must first be screened to determine if it is acceptable for management at the facility. This screening, described in Section 5.0, is performed during the pre-acceptance procedures. The pre-acceptance procedures are intended to provide information to allow ~~SKW~~CHK to decide whether or not to accept a waste stream at the facility. The pre-acceptance phase generally occurs prior to wastes being shipped to the ~~SKW~~CHK facility.

The pre-acceptance procedures require the collection of information about a waste stream; the information is used to determine if a waste stream is acceptable for management at ~~SKW.~~CHK. The information collected for this purpose includes the values or a range of values of a set of material parameters. Table C.1 contains a list of the mandatory pre-acceptance parameters.

Table C.1
Mandatory Parameters for Waste Analysis

| Mandatory Parameter | Pre-Acceptance | Incoming Load |
|---|---|---|
| Physical Appearance | % | % |
| Water Reactivity Screen | % | % |
| Oxidizer Screen | % | % |
| pH Screen | % | % |
| Radioactivity Screen | % | % |
| Ignitability Screen | % | % |
| Specific Gravity[1] | % | % |
| HOC Screen | % | % |
| Compatibility Evaluation | | % |

Note: A check (%) indicates that the parameter is mandatory.

[1]Specific gravity will be done on the liquid portion only of otherwise solid waste streams, where liquids are >20%.

## 2.2.2 Mandatory Incoming Load Parameters:

Upon the arrival of a waste shipment at the facility, procedures will be implemented to confirm that the incoming waste exhibits the same properties as the waste characterized during the pre-acceptance procedures. This confirmation is obtained by analyzing a sample of the incoming load for the same set of mandatory parameters as analyzed during the pre-acceptance procedures. If the results of these analyses are within the allowable tolerance range for each parameter, then the Technical Manager may conclude that the waste shipment essentially has the same properties as the waste characterized during the pre-acceptance procedures. The waste shipment is, therefore, considered to be suitable for management at ~~SKW.~~CHK.

In addition to the mandatory parameters confirming the pre-acceptance evaluation, a compatibility evaluation will be performed on the waste before it is transferred to another tank or container or mixed with other wastes.

The incoming load procedures and the acceptable tolerance ranges for the incoming load parameters are provided in Section 6.0.

Table C.1 provides a list of the incoming load parameters for which the values or a range of values will be determined during the incoming load procedures.

## 2.3 Supplemental Parameters:

Analyses for supplemental parameters may be performed at any step of the waste management process if the Technical Manager decides that further information on the waste is necessary. Some supplemental parameters are always required for wastes going to specific waste processing units, as defined in Section 2.4.2.

Some examples of supplemental parameters include:

- reactive cyanides screen,
- reactive sulfides screen,
- flash point,
- bulk density,
- total organic halogens,
- heating value,
- chlorides,
- percent ash,
- solvent screen,

- PCB screen,
- normality,
- toxicity characteristic leaching procedure,
- metals analysis, and
- presence of free liquids.

It may be necessary to use additional analyses performed by a suitable outside laboratory to further characterize a waste stream on a case-by-case basis, at the discretion of the Technical Manager.

A summary of some of the supplemental parameters and the rationales for determining their values or range of values are provided in Section 2.4. Parameters previously listed as mandatory (e.g., for pre-acceptance and incoming loads) may also function as supplemental parameters during various stages of waste management.

## 2.4 Rationale for Parameter Selection:

### 2.4.1 Rationale for Mandatory Parameters:

The rationale for selecting each mandatory parameter for waste characterization during pre-acceptance and incoming load procedures is provided below.

- Physical Appearance is used to determine the characteristics of a waste which are apparent by visual inspection. This facilitates comparison of the waste with prior waste descriptions. It is also used to detect multiple phases (e.g., liquids and solids or "multiphasic"). A change in physical appearance might be indicative of a change in waste character.

- Water Reactivity Screen is used to determine whether the waste has a potential to react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment when mixed with water. Knowledge of whether a waste is water reactive is necessary for safe management of the waste.

- Oxidizer Screen is used to identify the potential of the waste to react adversely with organic materials. Identification of a waste as an oxidizer allows for informed decisions regarding safe management of the waste.

- pH Screen is used to indicate potential corrosivity and compatibility with other wastes. pH may not apply to certain wastes (e.g., non-aqueous wastes). A knowledge of pH is necessary in order to arrive at informed decisions regarding waste management.

- Radioactivity Screen is used to identify regulated radioactive waste streams and to prevent their acceptance at ~~SKW.~~CHK.

- Ignitability Screen is used to identify potentially ignitable wastes as a safety precaution and to determine the appropriate management method. During the pre-acceptance procedures, the screen will be supplemented with a flash point test (e.g., ASTM methods D92 or D93) for those liquid materials where the ignitability screen results in a reading exceeding 500 ppm. During the incoming load procedures, the results of the Ignitability Screen will be used to indicate if the process generating the waste has changed and if the incoming load matches the description on the waste profile sheet.

- Specific Gravity (for liquids) can be used as an aid to determine if the process generating the waste has changed or to prevent the possibility of overloading a tank.

- HOC Screen (Bielstein Test) is used to indicate the presence of halogens and can be used as an aid to determine if the process generating the waste has changed.

- Compatibility Evaluation is performed to determine whether a waste may be safely stored or processed in a tank or container or mixed with other wastes.

## 2.4.2 Rationale for Supplemental Parameters:

A partial listing of supplemental parameters, and the rationale which the Technical Manager may consider in their selection, is shown below.

- Reactive Cyanides Screen is used to determine whether gaseous cyanides may be produced from the waste. Since the mixing of acids with cyanides must only occur under controlled conditions, a determination of the presence or absence of reactive cyanides will be made to allow the appropriate waste management decisions to be implemented.

- Reactive Sulfides Screen is used to determine whether gaseous sulfides may be produced from the waste. Since the mixing of acids with sulfides must only occur under controlled conditions, a determination of the presence or absence of reactive sulfides will be made to allow the appropriate waste management decisions to be implemented.

- Flash point is a measure of flammability and may be used to determine proper waste management with regard to safe handling methods or land disposal restrictions. A change in flash point may be indicative of a change in waste character.

- Bulk Density (for solids) can be used as an aid to determine if the process generating the waste has changed or to prevent the possibility of overloading a tank.

- Total Organic Halogens (TOX) determines the concentration of halogenated organic constituents in a material and may be useful as an aid in waste characterization or as an indicator of a change in waste character.

- Heating Value is measured as an aid in waste characterization or to determine if a waste is eligible for fuels blending. The parameter "heating value" is typically measured in units of Btu/lb. Heating value must be performed during pre-acceptance procedures on all hazardous wastes intended for processing through kiln fuel blending.

- Chloride concentration may be indicative of compounds subject to land disposal restrictions. Chloride concentration may also be determined as a final product requirement for fuels blending.

- Percent Ash is used to assist in formulating waste blends.

- Solvent Screen is used to screen for the presence of and, when possible, the concentration of solvents in a waste stream. This information is necessary to make waste management decisions such as whether a waste stream qualifies for solvent recovery or whether land disposal restrictions are applicable. Solvent screen must be performed during pre-acceptance procedures for all hazardous wastes intended for solvent reclamation.

- PCB Screen is used to screen for TSCA regulated PCB material which is not acceptable for management at

~~SKW.~~CHK. PCB concentration will be determined at any time that the Technical Manager suspects, or the generator notifies ~~SKW,~~CHK, that PCBs may be present in concentrations greater than or equal to 50 ppm. Once PCBs have been identified in a given waste stream, the PCB screen may become a mandatory parameter for that waste stream.

- Normality is used to determine the neutralization requirements for a strongly acidic or basic material. This test is normally performed on aqueous wastes with a pH of less than two (2) or greater than 12.5.

- Toxicity Characteristic Leaching Procedure (TCLP) enables determination of the concentration of certain constituents in waste extracts and may be used to identify materials which are subject to land disposal restrictions.

- Metals analysis may be performed to determine whether land disposal restrictions are applicable and whether the waste meets the requirements of the facility which will receive the waste from ~~SKW.~~CHK.

- Presence of Free Liquids is used to determine if a waste contains free liquids. The absence of free liquids would indicate that a container may be stored in an area without secondary containment; or that the waste, if otherwise meeting all treatment requirements under the land disposal restrictions, may be placed in a landfill for disposal without further treatment.

**3.0 Analytical Procedures: 40 CFR 264.13(b)(1) and (2)**

The typical analytical methods used to obtain the values of the parameters of concern are described in this section. As new analytical procedures are developed, these procedures may be adopted and the WAP updated accordingly, as provided in 40 CFR 270.42.

In some situations, analyses by the ~~SKW~~CHK laboratory may not be necessary or appropriate. Such situations would include:

- when the laboratory analyses are performed by another suitable laboratory,
- when the analyses and/or information are provided by the generator and provide an understanding of the waste to allow proper storage and handling,
- when a representative sample cannot be obtained (e.g., contaminated debris and equipment, personal protective equipment (PPE), etc.),
- when sampling may not be appropriate (e.g., nonhazardous waste, lab packs, 10-day transfer loads), or

when a representative sample cannot be prepared as specified in the analytical procedure.

In these situations, alternative methods of characterizing the waste will be used. Alternative methods may include information sources such as the Technical Manager's or the generator's knowledge of the waste or of the process(es) generating the waste.

When the generator provides the results of analytical testing performed by an off-site laboratory, the report must include certification of what standard analytical method was used to obtain the results. If a non-standard method was used, documentation must be provided to support the validity of the results. All methods of record will follow approved procedures specified in this Waste Analysis Plan.

### 3.1 Analytical Methods for Mandatory Parameters:

Analytical methods for the mandatory parameters are listed in Table C.2. The methods include standard test methods from EPA and ASTM. In addition to the standard methods, unique procedures and protocols formulated for the management of hazardous waste by ~~Safety-Kleen (Wichita) Inc.~~Clean Harbors Kansas, LLC may be utilized. These unique methods, provided in Attachment C-C, have proven to be useful for waste characterization.

Under circumstances where the defined methods may not yield valid data, the Technical Manager may elect to substitute an alternate method for one of those listed in Table C.2 or to modify a method for a particular waste stream. A decision of this sort by the Technical Manager will be documented in the operating record.

Table C.2
Analytical Methods for the Mandatory Parameters

| Mandatory Parameter | Methods | Reference/Comments[1] |
|---|---|---|
| Physical Appearance | (Refer to Reference/ Comments) | The waste or representative sample is inspected and the physical appearance of the waste is recorded, including: color, physical state (solid, semi-solid, liquids, or multiphasic), and layering (single phased, bi-layered, multi-layered). |
| ~~Water Reactivity Screen~~ | ~~USPCI-2~~ | ~~SKW Analytical Procedure 2; Screen for Water Reactivity~~ |
| Water Reactivity Screen | USPCI-2 | CHK Analytical Procedure 2; Screen for Water Reactivity |
| ~~Oxidizer Screen~~ | ~~USPCI-6~~ | ~~SKW Analytical Procedure 6; Screen for Oxidizers~~ |
| Oxidizer Screen | USPCI-6 | CHK Analytical Procedure 6; Screen for Oxidizers |
| ~~pH Screen~~ | ~~9040~~ | ~~SW-846 Method; pH of aqueous liquids using a probe where the aqueous phase constitutes at least twenty (20) percent of the total volume~~ |
| PH Screen | 9040 | SW-846 Method; pH of aqueous liquids using a probe where the aqueous phase constitutes at least twenty (20) percent of the total volume |
| | 9041 | SW-846 Method; pH of materials using pH indicator paper when method 9040 is not appropriate |
| ~~Radioactivity Screen~~ | ~~USPCI-7~~ | ~~SKW Analytical Procedure 7; Screen for Radioactivity~~ |
| Radioactivity Screen | USPCI-7 | CHK Analytical Procedure 7; Screen for Radioactivity |
| ~~Ignitability Screen~~ | ~~HRIW-1~~ | ~~SKW Analytical Procedure 1; Explosivity Screen~~ |
| Ignitability Screen | HRIW-1 | CHK Analytical Procedure 1; Explosivity Screen |
| | ~~USPCI-5~~ | ~~SKW Analytical Procedure 5; Explosivity Meter Vapor Test~~ |
| | USPCI-5 | CHK Analytical Procedure 5; Explosivity Meter Vapor Test |

Table C.2
Analytical Methods for the Mandatory Parameters

| Mandatory Parameter | Methods | Reference/Comments[1] |
|---|---|---|
| Specific Gravity | D1298 | ASTM Method; Specific Gravity of Liquids |
| ~~HOC Screen~~ | ~~HRIW-2~~ | ~~SKW Analytical Procedure 2; HOC Screen~~ |
| HOC Screen | HRIW-2 | CHK Analytical Procedure 2; HOC Screen |
| ~~Compatibility Evaluation~~ | ~~USPCI-25~~ | ~~SKW Analytical Procedure 25; Evaluation of compatibility~~ |
| Compatibility Evaluation | USPCI-25 | CHK Analytical Procedure 25; Evaluation of compatibility |

Notes:
1. ~~Safety-Kleen and SKW~~Clean Harbors and CHK Analytical Procedures and a list of the reference documents are provided in Attachment C-C.

## 3.2 Analytical Methods for Supplemental Parameters:

Supplemental analyses will be conducted using recognized protocols where available, such as those contained in "Test Methods for Evaluating Solid Waste" (SW-846, in effect as of January 31, 1992), or "Standard Methods for the Examination of Water and Wastewater" (APHA), or 40 CFR Part 136 (1991 edition). Attachment C-C contains a list of the most likely of these various standard analytical methods for some of the supplemental parameters.

~~SKW~~CHK may also utilize unique procedures and protocols formulated for the management of hazardous waste, which have proven to be useful for waste characterization. Some of the unique ~~Safety-Kleen and SKW~~Clean Harbors and CHK procedures are presented in Attachment C-C.

If the ~~SKW~~CHK laboratory is asked to perform other tests by either generators sending wastes to ~~SKW,~~CHK, or waste management facilities receiving wastes from ~~SKW,~~CHK, these tests may follow a protocol established by the EPA or another standards-setting body, or may be custom-designed specifically for that particular client. In such cases, any supplemental tests which directly impact

decisions regarding waste management will be documented in the operating records.

When the Technical Manager decides that supplemental testing is required, the selection of an analytical method will be based upon the property or parameter to be determined and the matrix of the material to be tested. In the selection of an analytical method, it should be noted that the actual analytical procedure used is identical in many cases, regardless of the matrix of the material, only the extraction and preparation steps are different. Consequently, although there are different method numbers for the analysis of water and solid waste or soils, the analytical procedures are the same. Before the Technical Manager relies on the results of an analytical method for waste management decisions, the proper quality control and quality assurance provisions must be in place for the analytical method.

## 4.0 Sampling Methods: 40 CFR 264.13(b)(3), 40 CFR Part 261, Appendix I

This section presents methods to be utilized by ~~SKW~~CHK to obtain a representative sample of wastes. These methods will apply to waste generated off-site (when sampled by ~~SKW)~~CHK) as well as facility-generated waste. Samples received for pre-acceptance analysis are typically sampled by the generator or his agent at the point of origin of the manifest, although ~~SKW or Safety-Kleen~~CHK or Clean Harbors may, on occasion, serve as the generator's agent to perform the sampling. Incoming load samples are typically taken by ~~SKW~~CHK personnel at the ~~SKW~~CHK facility, except when a shipment from ~~Safety-Kleen or SKW~~Clean Harbors or CHK is sampled at the point of origin (see Section 4.5.4). Discussions of the circumstances under which the sampling will be performed are presented in Sections 5.0 through 7.0. The specific sampling methods selected are dependent on both the nature of the waste and the type of container or tank that the waste is in, and will be decided upon prior to sampling.

4.1 Sampling Safety Precautions:

Because of the potential for exposure to hazards, personnel will wear, at a minimum, safety glasses, gloves, hard hat, and protective clothing while sampling. Personnel may check the waste profile sheet and other pre-acceptance characterization data, manifest, or other documents to be familiar with the wastes and ensure that necessary precautions are taken prior to beginning sampling. Additional protective equipment such as faceshields, respirators, etc., will be used as needed.

### 4.2 Sampling Method References:

Generally, sampling will be performed using methods described in: "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (SW-846, in effect as of January 31, 1992); "Handbook for Sampling and Sample Preservation of Water and Wastewater" (EPA-600/4-82-029); "Samplers and Sampling Procedures for Hazardous Waste Streams" (EPA-600/2-80-018); or 40 CFR Part 261, Appendix I (1991 edition). Excerpts from "Samplers and Sampling Procedures for Hazardous Waste Streams" are included for reference in Attachment C-D. Due to the variability of waste, personnel performing the sampling may be required to alter a particular method for some situations. In all cases, the goal of the sampling effort will be to obtain a sample that is representative of the whole.

### 4.3 Sampling Locations:

Samples will be taken from a variety of locations and therefore will require a variety of sampling techniques and devices. Waste may be sampled from storage vessels, such as a tank, drum, roll-off box, lugger box, tanker or dump-type truck. Waste may also be sampled from other locations, such as a sump.

Accessibility to the waste will influence the number of and the location from which samples can be taken. Where practical, samples will be taken from locations displaced both vertically and horizontally. The number of samples required depends on the distribution of the waste components in the storage vessel. A number of samples may be taken to address variations in the waste. If examination indicates stratification in the waste, then each layer may be composited in proportion to its estimated volume.

### 4.4 Sampling Equipment:

Sampling equipment will be used to obtain a representative sample. This equipment may include a Coliwasa, glass rods, Bacon bomb, etc. Because each sampling situation is unique, the equipment and applications may have to be modified to ensure that a representative sample is collected and its physical and chemical integrity are maintained. The personnel performing the sampling will be responsible for determining the appropriate sampling apparatus.

## 4.5 Other Sampling Considerations:

### 4.5.1 Frozen Shipments or Samples:

Loads may arrive at ~~SKW~~CHK at temperatures which prevent a representative sample from being obtained. Under such circumstances, the wastes will be allowed to warm until such time as sampling can be performed. Sampling can occur at any temperature provided a representative sample can be obtained.

4.5.2 Cleaning of Sampling Apparatus:

Sampling tools are visually checked to make sure that they are clean before the sample is taken. When necessary, cleaning of sampling equipment is performed as follows.

- Solids are removed to the maximum extent possible with a brush, cloth, or other means;
- the sampling tool is washed with clean water or appropriate cleaning solution; and
- solids and rinsate are collected and managed as facility generated waste.

4.5.3 Management of Samples after Analysis:

Samples from waste streams will be either returned to the generator or managed appropriately. For example, the sample from a waste stream approved for a given treatment may be similarly treated. Wastes and/or samples from the ~~SKW~~CHK laboratory may be consolidated either in a container or a lab pack as appropriate. ~~SKW~~CHK laboratory wastes will be managed on site or shipped off-site for alternate treatment as appropriate. For accepted waste streams the representative sample, if one was obtained, will normally be retained by ~~SKW~~CHK for at least 30 days. Generator supplied samples of waste streams which are unacceptable for management at ~~SKW~~CHK are returned to the generator (or a representative of the generator), managed on site, or shipped to an alternate waste management facility.

To facilitate this process of accumulating samples and laboratory waste, samples which are approved for the same management process may be consolidated, if compatible, and managed under the provisions of 40 CFR 262.34.

### 4.5.4 Remote Project Sampling and/or Analysis:

In cases where off-site sampling or analysis is used for the purpose of satisfying the incoming load procedures, a SK representative will be at the site to ensure that the provisions of this WAP are observed. For example, this may occur at remediation projects managed by ~~Safety-Kleen.~~Clean Harbors.

### 4.5.5 Lab Packs:

Since lab packs contain small quantities of multiple wastes, they are not sampled. Instead, the generator or a representative of the generator will provide an inventory of the contents of the lab pack. The inventory will be reviewed for incompatibility of contained wastes and land disposal restrictions. ~~SKW~~CHK may sample bulked-up lab pack wastes according to container sampling procedures.

### 4.5.6 Nonhazardous Wastes:

Nonhazardous wastes will be accepted at ~~SKW.~~CHK. In order for a load of nonhazardous waste to be accepted, a nonhazardous waste form or a hazardous waste manifest must be completed by the generator. Typical examples of these forms are provided in Attachment C-A. The nonhazardous form utilized has the generator or treatment facility attest that the material is nonhazardous. These wastes will be inspected for physical appearance, at a minimum. Other information, including analytical data, will be obtained as necessary to ensure proper waste management.

4.5.7 **Vitrified, Cemented, and Other Materials Exhibiting High Structural Integrity:**

There are several wastes which do not allow representative sampling. For example, structural steel, tanks, pipe, cement, glass, filter cartridges, and several other materials will be managed which do not allow the implementation of normal sampling protocols. Of necessity, these materials must be managed on a case-by-case basis.

4.5.8 **Regulatory Cleanups**

When a regulatory agency, or their contractor, undertaking a clean-up of a site (e.g., EPA or Kansas Department of Health and Environment) has established the waste characterization information, ~~SKW~~CHK may utilize this characterization in lieu of pre-acceptance analytical and incoming load analytical information.

5.0 Pre-Acceptance Procedures: 40 CFR 270.14(b)(2), 40 CFR 264.13(a), and 40 CFR 264.12(a)

The purpose of the pre-acceptance procedures is to determine if a waste is acceptable for management at ~~SKW.~~CHK. If it is determined that the waste can be managed at ~~SKW,~~CHK, the generator is notified and may schedule shipment of the waste.

All hazardous wastes generated off-site and proposed for management at ~~SKW~~CHK will be subject to these procedures. For situations where sampling and analysis cannot be performed due to the nature of the waste or container (e.g., PPE, debris, lab packs, etc.), the circumstances will be documented in the operating record and proper management of the waste will be determined by knowledge of the waste or of the process generating the waste.

## 5.1 Typical Pre-Acceptance Procedures:

### 5.1.1 Waste Characterization:

The decision to accept a waste for management at ~~SKW~~CHK will be in part based on a characterization or profile of the waste. At a minimum, this characterization is accomplished through knowledge of the waste or laboratory analysis of the waste for the mandatory pre-acceptance parameters. The Technical Manager may rely on a characterization performed at another facility owned or operated by SK in lieu of duplicating the characterization at ~~SKW.~~CHK.

The activities involved with characterizing a waste at ~~SKW~~CHK for pre-acceptance purposes are provided below.

- Requirements of the Generator: The generator of a waste stream will be required to provide some information on the properties of the waste. The information may include:
  - the chemical and physical data requested on the Waste Profile Sheet (WPS) (A typical WPS

is shown in Attachment C-A. An equivalent form approved by ~~SKW~~CHK may be used in lieu of a WPS.),

- results from the analysis of a representative sample by a laboratory with an appropriate QA/QC plan. If the generator supplies the results of analysis for the mandatory parameters, a representative sample from the generator may not be required, and/or
- any other supporting documentation as appropriate (e.g., Material Safety Data Sheets, notification and/or certification as required by 40 CFR Part 268).

~~SKW~~CHK will review the information provided by the generator for acceptability. If necessary or appropriate, ~~SKW~~CHK will request additional information from the generator including process information, a representative sample, or the results from other analyses. When the information is considered acceptable, the waste will be evaluated for management at the facility (Refer to Section 5.1.2). The information will be considered acceptable when a reasoned evaluation of the waste can be performed in accordance with Section 5.1.2.

- Analysis for Parameters (Mandatory and Supplemental):

  ~~SKW~~CHK may confirm certain waste characterization data supplied by the generator by analyzing the representative sample(s) of the waste for one or more of the mandatory pre-acceptance parameters.

  The Technical Manager may also require that analyses be performed for certain supplemental parameters. Analyses for these supplemental parameters may be performed at ~~SKW~~CHK or a suitable off-site laboratory.

  The need for analyses for the supplemental parameters will be based on:

  - the completeness of the chemical and physical characterization of the waste,
  - the completeness of the description of the process generating the waste,
  - the results of pre-acceptance analyses performed at ~~SKW~~CHK or by another suitable laboratory, and
  - the Technical Manager's experience and

judgement.

Pre-acceptance analyses will not be required for lab packs. An inventory of the contents of each lab pack will be provided by the generator or his representative. The inventories will be reviewed for compatibility of contained materials and land disposal restrictions.

### 5.1.2 Evaluation:

After completing the pre-acceptance waste characterization, the Technical Manager will determine the acceptability of the waste for management at ~~SKW.~~CHK. This determination will be based on permit conditions, availability of proper treatment techniques, and storage and off-site disposal capacities.

The Technical Manager is responsible for making the decision to accept or reject a waste based on an evaluation of the information and data gathered during pre-acceptance procedures. After this decision is made, the generator will be notified of the decision to approve the waste for management, to approve the waste under certain conditions (e.g., packaging, etc.), or to reject the waste for management.

If the waste is to be received from a foreign source, the Kansas Department of Health and Environment will be notified in writing at least four weeks in advance of the first scheduled shipment, in accordance with 40 CFR 264.12(a). This notification will include the generator's name, address, quantity of hazardous waste, and EPA hazardous waste code(s).

### 5.2 Recharacterization Frequency:

~~SKW~~CHK will recharacterize incoming waste streams at least every two (2) years. Any incoming load accepted at ~~SKW~~CHK must have been characterized (or recharacterized) within the last twenty-four (24) months. A sample of an incoming load may be used for the recharacterization. ~~SKW~~CHK will also repeat the pre-acceptance characterization if:

- a generator notifies ~~SKW~~CHK that the process generating the waste has changed,

- the incoming load is outside of the acceptable tolerance range provided in Table C.3 (unless the discrepancy can be resolved as described in Section 6.1.5, Incoming Load Evaluation), or
- the Technical Manager suspects that a waste shipment differs from the pre-acceptance characterization (the generator may be contacted prior to recharacterizing the waste).

In the event that a Kansas-generated waste changes such that the recharacterization involves assigning or removing a waste code, the related analyses will be performed at a Kansas certified laboratory.

## 6.0 Incoming Load Procedures: 40 CFR 270.14(b)(2), 40 CFR 264.13(a), (b)(4), and (c)

The purpose of these incoming load procedures is to determine if a waste shipment (incoming load) arriving at ~~SKW~~CHK matches the characterization of waste on which the pre-acceptance evaluation was based. Wastes which correspond to the waste characterization documented during the pre-acceptance procedures may be accepted for management at ~~SKW.~~CHK. This section provides the procedures for determining if a significant difference exists between the pre-acceptance characterization and the waste shipment.

On occasion, a generator will ship a load before pre-acceptance procedures are completed. Incoming loads that have not been qualified through pre-acceptance procedures prior to arrival at ~~SKW~~CHK will not be accepted until the pre-acceptance procedures described in Section 5.0 have been performed. In the case of loads of containers, the containers may, before or after they are unloaded from the transport vehicle, be sampled for analysis of the mandatory pre-acceptance parameters. The containers will remain staged in one or more container management unit(s) until the pre-acceptance procedures are completed. Under these circumstances, the same analytical results may be considered both as pre-acceptance and incoming load analyses.

The procedures described in this section apply to hazardous waste generated off-site which will ultimately be managed at ~~SKW.~~CHK. Facility generated wastes are not subject to the incoming load procedures described in this Section. Wastes received at ~~SKW~~CHK only for the purpose of transfer to another facility in accordance with 40 CFR 263.12 and 264.1(g)(9) are also not subject to the incoming load procedures. These 10-day transfer wastes may remain at the site for a period not to exceed ten (10) days prior to continuing the journey to the designated treatment, storage, or disposal site. 10-day transfer loads remain "in transit" during the entire stay at the site. These wastes may be off-loaded and transferred to another vehicle. Because these 10-day transfer loads are never accepted into the ~~SKW~~CHK waste management system, no analyses are performed on the loads. However, 10-day transfer wastes are tracked using the Waste Tracking System. 10-day transfer loads generally remain on the truck or in the loading dock areas, although the wastes may occasionally be placed in a CMU temporarily prior to reshipment off-site. At no time will the total waste volume in any CMU exceed the permitted storage capacity.

For situations where sampling and analysis of an incoming load cannot be performed due to the nature of the waste or the containment vessel (e.g., debris, PPE, lab packs, etc.), the circumstances will be documented in the operating record and proper management will be determined by knowledge of the waste or of the process generating the waste.

## 6.1 Typical Incoming Load Procedures:

The events which typically occur during the incoming load procedures are described below. The events discussed are not necessarily performed in the sequence presented.

### 6.1.1 Incoming Load Arrival:

Incoming load evaluation will be performed after arrival of the waste shipment at ~~SKW.~~CHK. An incoming load will remain in the receiving area, except for containers to be managed in the container management units, until any significant discrepancies have been resolved. Shipments of containers may be sampled before they are unloaded, or they may be unloaded at the container management units for staging and sampling.

Wastes may remain on the transport vehicle or in a staging area for up to 72 hours while awaiting completion of acceptance procedures. If incoming load procedures are not completed within that time, the containers will be placed in a container management unit, segregated according to the information available from the manifest, Waste Profile Sheet, and other documentation. In the event that subsequent information (e.g., analytical results) indicates that the material is incompatible with the other wastes stored in that CMU, the container will be moved to an appropriate CMU. The Waste Tracking System will record the location and date of acceptance for each container received at the site.

### 6.1.2 Manifest Review:

Incoming waste shipment manifests are subjected to a review for completeness. A typical manifest is shown in Attachment C-A. Information about the generator, the waste, and the piece count, volume, or weight will be checked. A significant discrepancy between the manifest and the actual shipment is defined as:

- for bulk waste, variation greater than ten (10) percent weight or volume,
- for batch wastes, any variation in piece count, such as a discrepancy of one drum in a truckload, or
- any significant variation in waste type.

Discrepancies may be resolved by a review of records maintained at ~~SKW~~CHK or through discussion with the generator, transporter, or sales representative. Corrections of significant discrepancies in the manifest are made with the concurrence of the generator and are initialed and dated by the individual making the corrections.

If a significant discrepancy in waste type cannot be resolved, the affected wastes will be rejected. Causes for rejection can include, but are not limited to, variance from expected constituents and constituent concentrations and variance from expected physical characteristics. If a significant discrepancy in piece count or volume cannot be resolved, the load may be accepted or rejected. If the load is accepted, ~~SKW~~CHK will notify the Kansas Department of Health and Environment in accordance with 40 CFR 264.72(b), and will submit an exception report. The decision to reject a waste load is made by the Facility Manager or his designee. If a waste is rejected, it will be returned to the generator or sent to an alternative facility agreed to by ~~SKW~~CHK and the generator.

### 6.1.3 Inspection, Sampling and Analysis:

Analysis will be performed as outlined in this WAP on the incoming load for the parameters listed on Table C.1. The methods of sampling and sample preparation will vary depending on the physical state of the waste and the type of container in which the waste shipment arrives. Samples for incoming load analysis, when sampling is appropriate, will normally be retained at the ~~SKW~~CHK laboratory for at least seven (7) days after analysis.

- Bulk Loads of Liquid, Solid, or Multiphasic Wastes:

  Bulk liquid, solid, or multiphasic wastes shipped to ~~SKW~~CHK will be inspected and, where appropriate, sampled for laboratory analysis. The values of the incoming load parameters will be determined by analysis of a sample of the shipment.

An exception to this will be where multiple bulk loads of a single waste stream are received from a single source (e.g., a major site clean-up of contaminated material or a large volume generator). These shipments may arrive by rail in rail cars, or by road in bulk containers (e.g., end-dump trucks or intermodal containers). In either case, samples from twenty (20) percent of the bulk containers will be analyzed for the incoming load parameters. These samples may be obtained either when the wastes are transferred into the bulk containers or at the ~~SKW~~CHK facility prior to unloading. The contents of bulk containers will, at a minimum, be inspected for physical appearance.

Containers: Each shipment of containers is checked against the manifest to confirm piece count and type of container. Containers will be checked for proper labelings and markings and to see that they are in acceptable condition (i.e., not deteriorated, damaged, corroded, leaking or bulging). Containers may be sampled before or after off-loading.

During the incoming load procedures, the contents of a minimum of ten (10) percent of the containers from a waste stream will be sampled. The samples may be composited and the values of the incoming load parameters will be determined by analysis of the composite.

One exception to this will be where multiple waste streams from one generator have been pre-accepted into the same management category. A composite of a minimum of ten percent of all such drums or other containers on the same incoming load may be made for the incoming load analysis.

Another exception will be multiple generators who produce similar waste streams by a similar process. When such waste streams are received on the same incoming load, the contents of a minimum of ten percent of all containers from such waste streams will be sampled and composited. The values of the incoming load parameters will be determined by analysis of the composite as if the composite were from a single generator's waste stream.

In order to achieve more representative sampling, waste streams accepted for particle size reduction (e.g., shredding or granulating) may be sampled for incoming load analysis after such reduction has been accomplished. These waste streams will be evaluated for ignitability and reactivity considerations, including analytical screens for these parameters when possible, prior to particle sizing.

Containers will remain closed except during sampling procedures and when adding or removing wastes. Additional container storage and treatment considerations, including provisions for visual inspection, are provided in Section 7.1.1.

6.1.4 **Customer File Review:**

The hazardous waste manifest or nonhazardous waste form will be compared to information contained in the customer file for items such as:

- approved management method(s),
- required analyses,
- recommended supplemental analyses (if any),
- pre-acceptance analysis data,
- available test results from previous incoming loads, and
- any other pertinent information.

6.1.5 **Incoming Load Evaluation:**

Analytical results for the incoming load parameters are recorded on the ~~SKW~~CHK Material Receipt Record (typical form shown in Attachment C-A) and compared to the corresponding pre-acceptance analysis. Table C.3 lists the parameters whose values are determined during incoming load procedures, and the acceptable range of variation, between the value of a parameter determined at pre-acceptance and at incoming load, within which a waste may be accepted. For each parameter, if the difference between the values of a parameter determined during pre-acceptance and incoming load procedures is within the acceptable range, the waste shipment will be deemed the same (conformance) as the waste accepted for management at ~~SKW~~CHK during the pre-acceptance procedures. If the difference between the values of a parameter determined during the pre-acceptance and incoming load procedures is outside of the acceptable range, the waste shipment will not be deemed the same (nonconformance).

Table C.3
Acceptable Tolerance Ranges
for Incoming Load Analyses

| Parameter | Tolerance Range |
|---|---|
| Physical Appearance | Similar waste character[1] |
| pH Screen[2] | +/- 1.5 pH units |
| Specific Gravity | +/- 15% (liquids and sludges) |
| Water Reactivity Screen | positive to negative, only[3] |
| Ignitability Screen | positive to negative, only[3] |
| Radioactivity Screen | negative is the only acceptable result |
| Oxidizer Screen | positive to negative, only[3] |
| HOC Screen | positive to negative, only[3] |

Notes:

1. The inherent variability of the physical appearance of wastes does not allow quantification of the tolerance range. The inspection for physical appearance is performed during the incoming load procedures to indicate a significant change in the nature of the waste (e.g., a liquid rather than a solid) which may indicate a change in the composition or the process generating the waste.
2. The pH is determined for aqueous liquids or free liquids associated with solids or multiphasics.
3. If the results of the screen are positive during the pre-acceptance procedures, the results during the incoming load procedures can be either positive or negative. If the results of the screen are negative during the pre-acceptance procedures, the results during the incoming load procedures can only be negative (i.e., a positive result is outside of the acceptable tolerance range).

An apparent nonconformance may be resolved before the waste is rejected or recharacterized. One or more of the following sources of information may be used to resolve an apparent nonconformance:

- the generator's knowledge of the waste or of the process generating the waste,
- the Technical Manager's knowledge of the waste or of the process generating the waste in light of the pre-acceptance characterization and any additional information in the customer file or accompanying the waste shipment (e.g., manifest, Material Safety Data Sheet, etc.), or
- additional laboratory analysis.

Resolution of any nonconformance will be documented in the operating record. Nonconformance of waste shipments which cannot be resolved will be documented in the operating record. Wastes found to be nonconforming will be rejected or reevaluated prior to acceptance. If the generator concurs with the reevaluation, the waste can be approved for acceptance. If the generator rejects the evaluation, the waste will be returned to the generator or sent to an alternate facility of the generator's choosing.

Incoming load evaluation is aided by the use of Figure C.1. This figure is intended to serve only as a guide in the decision-making process.

For lab packs, the Incoming Load procedures including a piece count, inspection of drum numbers and identification, and a review of the inventory list provided in the accompanying paperwork to verify that the manifest and pre-acceptance information match.

Figure C.1. Typical Incoming Load Evaluation

## 6.2 Waste Material Transfer and Tracking:

Waste will be assigned and tracked by a unique Identification Number assigned by ~~SKW~~CHK upon arrival at ~~SKW.~~CHK. Waste tracking information is maintained as part of the operating record. Internal tracking and recording of waste movement includes:

- waste identification,
- arrival date,
- weight and/or quantity of wastes received,
- current and previous storage locations on-site; and
- recording of waste management after receipt.

The Waste Tracking System will also provide a record of manifest information, analytical data, and other relevant information.

A waste tracking report will be generated for each day that waste is moved, and as necessary will be printed and made available to site personnel and inspectors. Historical waste tracking information will be maintained on-site as part of the operating record.

## 7.0 Storage, Treatment or Other Waste Management Activities:

Management of a given waste within the facility which results in a change of its character may make the waste subject to additional inspection, sampling, and analysis. Many of the analyses needed for storage, treatment or off-site disposal are performed during either the pre-acceptance or incoming load procedures specified in Sections 5.0 and 6.0 of the WAP. Additional analyses may be conducted, before off-site management of the waste, if there is reason to document that the waste may have significantly changed during storage or treatment or to confirm compliance with the restrictions on land disposal contained in 40 CFR Part 268.

The waste management processes for which periodic sampling and analysis may be applicable include:

- Storage, consisting of containers and tanks;
- Treatment, including blending, particle sizing, drying, drum scraping and washing, and treatment in containers and container management activities; and

- Off-site disposal, consisting of shipment of wastes to a landfill, injection well, etc.

The analytical procedures for each of these waste management processes is described separately below. For situations where sampling and analysis cannot be performed due to the nature of the waste or container (e.g., PPE, debris, lab packs, etc.), the circumstances will be documented in the operating record. In this case, the Technical Manager will determine proper waste management based on knowledge of the waste (e.g., an inventory of the contents of a lab pack) or of the process generating the waste.

## 7.1 Storage:

### 7.1.1 Storage in Containers:

In addition to the incoming load procedures for containers, the following considerations for storage in containers will be observed.

- Visual Inspection: For containers placed in the container management units for storage or treatment at ~~SKW,~~CHK, ten (10) percent of the shipping containers from a waste stream are sampled during the incoming load procedures (this does not apply to wastes which cannot be sampled such as lab packs, debris, etc., or trans-shipped wastes destined to another waste management facility). The exterior of all containers is visually inspected during unloading, and subsequently will be inspected in accordance with the Inspection Plan (Section F). The contents of all containers that are emptied, mixed, or otherwise processed are subject to visual inspection at least once prior to processing.

- Storage Areas: Following unloading, hazardous wastes in containers are stored in areas equipped with secondary containment.

- Compatibility: Once they have been unloaded, analyzed, and accepted, wastes are segregated to ensure that incompatible wastes are not stored together. Even if

Incoming Load procedures are not completed within 72 hours, containers will be placed into CMUs, segregated according to information from the manifest, Waste Profile Sheet, and other documentation. If subsequent analytical results or other information indicate that the waste may be incompatible with other wastes in that CMU, the waste will be moved into an appropriate CMU.

- Waste with Ignitable and Reactive Characteristics: Ignitable and reactive wastes are identified through the pre-acceptance and incoming load procedures described in the WAP and by information submitted by the generator. Wastes identified as reactive will be managed so as to ensure that these wastes do not contact potentially incompatible wastes. Even if Incoming Load procedures are not completed within 72 hours, containers will be placed into CMUs, segregated according to information from the manifest, Waste Profile Sheet, and other documentation. If subsequent analytical results or other information indicate that the waste may be incompatible with other wastes in that CMU, the waste will be moved into an appropriate CMU.

### 7.1.2 Storage in Tanks:

In addition to the incoming load procedures for waste in storage tanks, the following considerations will be observed.

- Compatibility: Wastes added to the tanks must be compatible with the contents of the tank and the material of construction of the tank. A compatibility evaluation as detailed in Attachment C-C (USPCI-25) will be performed prior to transferring a waste into a tank.

. Waste with Ignitable, Corrosive and Reactive Characteristics: Bulk ignitable, corrosive and reactive wastes are identified through the pre-acceptance and incoming load procedures and by information submitted by the generator (e.g., manifest, notification, etc.). Liquid wastes which exhibit the characteristic of ignitability will be placed in appropriate tanks for storage and/or treatment at the facility. Reactive wastes will not be placed in the tanks or tank systems for treatment, but may be stored in the tanks if the waste is protected from any material or conditions that may cause the waste to react, or if such storage in the tanks is used solely for emergency purposes.

## 7.2 Treatment:

Analyses which support the treatment processes available at ~~SKW~~CHK may be divided into three categories, each with a specific purpose:

- Pre-treatment analyses confirm that the waste falls within the selected process design parameters and may allow improvement of the process conditions;
- In-process analyses are performed as needed to control the process and to monitor progress; and
- Post-treatment analyses may be performed as needed to confirm that treatment is successful and that the characteristics of the process effluent are such that

it can be sent to the next step (e.g., disposal, further treatment, discharge, reuse, etc.).

7.2.1 Blending:

The process of blending waste is performed to produce a mixture which can be used as a supplemental fuel for boilers, industrial furnaces, lime and cement kilns, or similar operations. The blended wastes may also be incinerated. In this process, wastes containing sufficient heating values will be blended with other suitable wastes. Pre-acceptance analyses are used to determine the acceptability of each waste stream for the blending process. Additional analysis for heating value will be performed during pre-acceptance procedures for all hazardous wastes destined for supplemental fuels. The heating value of supplemental fuels sent to BIFs that have not received a RCRA permit for the BIF unit and have not obtained certification of compliance with the BIF requirements will comply with the requirements of 40 CFR 266 or applicable state law, whichever is more stringent.

In-process analyses may be performed to monitor and characterize the intermediate mixture. Post-treatment analyses may consist of those tests necessary to ensure that the blended waste mixture is within the final product parameters. The final product parameters are based on the permits and needs of the facility which will receive the product from ~~SKW.~~CHK. For example, if the facility which will receive the product has specifications for a minimum heating value and a maximum chlorine content, then the blend requirements will be a function of these specifications.

### 7.2.4 Drum Scraping and Washing:

The drum scraper enhances removal of viscous liquids and solids from containers during waste processing. The drum washer removes waste residues from emptied drums. Due to the nature of these treatments, supporting analyses are not typically required.

## 7.2.5 Treatment in Containers and Tanks, and Container Management Activities:

Treatment in containers and container management activities will include the following. Due to the nature of these treatments, supporting analyses are not typically required except as discussed below.

- Lab Pack Container Repackaging: Lab packed wastes may be combined for treatment, recycling, incineration, kiln fuel use, or other off-site management.
- Filtration: Portable filtration units are used to remove particulates from liquid streams.
- Absorption or Solidification: ~~SKW~~CHK may use non-reactive absorbent material to absorb or solidify small quantities of incidental liquid or sludge in containers of solids. This activity is intended to make the material more amenable to proper transportation or to satisfy the requirements of the disposal facility for a uniform material, not to change the pre-acceptance

management category of the waste. Due to land disposal restrictions, fly ash, cement, or other material will be used to solidify liquids if the material is destined for disposal at a landfill. If absorbents are used, the receiving landfill facility will be notified.

Physical/chemical treatment: ~~SK~~WCHK may treat wastes in containers or tanks using neutralization, phase separation, blending, stabilization, phase changes, polymerization, or other treatment methods that change the physical or chemical characteristics of the waste. Pre-treatment analyses are used to determine whether a waste is amenable to treatment and, as necessary, to determine the appropriate reagents and mix ratios to ensure safe and complete treatment.

In-process analyses may be performed to monitor and characterize the intermediate mixture. Post-treatment analyses may be used to determine that treatment is complete or to determine that treatment product requirements have been met.

## 7.3 Off-site Management:

Many of the analyses needed for off-site management are performed during either the pre-acceptance or incoming load procedures. Additional analyses may be conducted if there is reason to document that the waste may have significantly changed during storage or treatment or to confirm compliance with the land disposal restrictions when applicable.

## 7.4 Other Considerations:

### 7.4.1 Lab Packs:

Lab Pack inventories will be reviewed during the incoming load procedures for consistency with shipping papers and the manifest, incompatibility of contained materials, and land disposal restrictions. Since lab packs contain many small quantities of individual materials, they will not be sampled. All lab packs will be visually inspected, and at least ten (10) percent of the lab packs received will be opened and visually inspected. The contents of lab packs that are decanted and bulked into larger containers will then be subject to container sampling procedures as facility generated wastes. A record of all on-site movement of lab pack wastes will be part of the waste tracking system.

### 7.4.2 Management of Facility Generated Wastes:

Examples of facility generated wastes include:

- sump residues;
- clean-up from spills and decontamination of waste management units;
- floor sweepings from hazardous waste management units;
- wash water;
- residue from in-line basket strainers or other process related ancillary equipment;
- personal protective equipment;

- laboratory wastes;
- tank bottoms;
- used oil;
- other solid waste generated from the management of a hazardous waste; and

- other miscellaneous materials originating from a waste generating process (e.g., solvents or degreasers from the maintenance area, etc.).

Any hazardous wastes generated at the facility will be managed in accordance with the provisions of the WAP (with the exception of the incoming load procedures) and with ~~SKW~~CHK acting as the generator. Any hazardous wastes generated at the facility that are stored on-site in containers for less than ninety (90) days will be managed in accordance with 40 CFR 262.34.

Where the facility generated waste is traceable to a known waste generating process or segregated storage area (such as a container management unit or an individual tank), traceable codes are carried on ~~SKW~~CHK wastes. Where the facility generated waste is not traceable, a sample of the waste will be characterized through the pre-acceptance procedures, provided in Section 5.0 of this WAP, to determine proper management. When laboratory analyses are necessary to assign or remove a waste code to site-generated wastes, those analyses will be performed at a Kansas certified laboratory.

Facility generated wastes will be collected and placed in tanks or containers. A compatibility evaluation will be performed if the facility generated waste is added to a tank or container already containing waste.

### 7.4.3 Change of Tank or Container Service:

A change in service of a container, tank system, or other equipment (i.e., placing a waste which is incompatible with the previous contents) will only occur if the cleaning procedures described below are followed. The container or tank will be rinsed with a neutral or mutually compatible material. This material can be other wastes. The rinse can also be accomplished by filling the container or tank with other wastes. Upon removal of the "rinse", the container or tank will be considered ready for the change in service. Tank entry and inspection will be performed as necessary. Material in the tank will maintain all listed codes between tank cleanings.

A change in service from hazardous waste to non-hazardous waste treatment or storage will involve slightly different cleaning procedures. The unit will be emptied of waste and cleaned using whatever means necessary (e.g., brush, sweep, scrape, wash, rinse, etc.) to remove residuals. When the unit shows no visible evidence of contamination, the unit will be determined to be cleaned sufficiently to enable non-hazardous waste use. As an extra precaution, the first three volumes of non-hazardous waste run through the unit following cleaning will be managed as hazardous waste carrying the codes that had been contained in the tank previously. Subsequent batches of non-hazardous waste will be managed as non-hazardous.

For units that are not amenable to the cleaning described above, the facility will run three volumes of waste or a cleaning agent through the unit prior to managing subsequent wastes as non-hazardous. For equipment, the facility will either triple rinse the equipment with a cleaning agent or non-hazardous waste, or will run three volumes of waste or cleaning agent through the equipment prior to managing the subsequent wastes as non-hazardous.

The facility may, on occasion, opt to manage non-hazardous wastes through a hazardous waste unit that has not been cleaned. Under these circumstances, ~~SKW~~CHK will manage those non-hazardous wastes as hazardous, in accordance with 40 CFR 261.3.

7.4.4 **Other Management Activities:**

Other waste management activities which will take place at ~~SKW~~CHK will include:

- kiln fuel solids repackaging, in which solids are transferred into smaller containers that can be used as kiln fuel charges;
- transferring drummed solids into gondolas for safer and more economical transport to landfill facilities where this material will be disposed;
- transferring drummed liquid into tanker trucks for off-site shipment and disposal;
- transferring material from drums that show signs of deterioration to new drums, or transferring incinerables from steel drums to approved poly drums to allow easier incineration; and
- when shipping requirements allow, repackaging friable solids to be disposed in bulk processes into fiber boxes or bags that better accomodate the disposal handling technology.

## 8.0 Quality Assurance Plan: 40 CFR 264.13

### 8.1 Introduction:

The QA/QC measures described herein will help to ensure that the data provided by the laboratory analysis performed at or for ~~SKW~~CHK are technically sound and statistically valid.

The data generated by the laboratory in conjunction with the waste analyses will be used to determine certain parameters of the wastes to be managed at ~~SKW.~~CHK. The handling and treatment procedures and determination of treatment efficacy will be based on these data.

The processing of waste and corresponding analytical requirements during the management of wastes at the facility (i.e., from pre-acceptance characterization through shipment off-site) are described elsewhere in this WAP (refer to Sections 5.0 through 7.0). The terms used in this section will have the same meaning as provided in SW-846 ("Test Methods for Evaluating Solid Waste," EPA, in effect as of Jan. 31, 1992).

## 8.2 Laboratory Organization:

The lab will generally be organized as illustrated in Figure C.2. This organization may be altered as workloads, equipment, and methodologies change.

Figure C.2. Typical Laboratory Organization Chart

8.3 Quality Assurance Objectives:

The quality assurance objectives of the WAP are to provide data that are of known and documented quality. The mandatory parameters for which analyses will be performed during the pre-acceptance and incoming load procedures are listed in Table C.1. Table C.4 lists the precision and accuracy goals for the mandatory parameters.

Other supplemental analyses may be performed, as dictated by operational requirements. If supplemental analyses are performed, the quality assurance objectives will be as defined in the analytical method used or as developed by ~~SKW/Safety-Kleen.~~CHK/Clean Harbors Kansas LLC.

Table C.4
Precision and Accuracy Objectives
for the Mandatory Pre-Acceptance and
Incoming Load Parameters[1]
(for Waste Samples)

| Measurement Parameter | Precision | Accuracy |
|---|---|---|
| Water Reactivity Screen | pos./neg. | N/A |
| Oxidizer Screen | pos./neg. | N/A |
| pH Screen | +/-2 pH units | +/- .5 pH units |
| Radioactivity Screen | pos./neg. | N/A[2] |
| Ignitability Screen | pos./neg. | N/A |
| Specific Gravity | +/- 20% | 100 +/- 20% |
| HOC Screen | pos./neg. | N/A |

Note:
1. If supplemental analyses are performed the QA/QC defined in the method will be used.
2. ~~S~~KWCHK cannot evaluate the accuracy data on this test due to lack of calibration materials. The meter will be calibrated at least annually.

## 8.4 Sampling and Analytical Procedures:

### 8.4.1 Pre-Acceptance:

Information about a pre-acceptance sample will be entered into a sample record. The sample will be tracked by EPA Identification Number or such other numbers as may be deemed appropriate. This number will be used to track the sample information through the record keeping system. The sample container and any analytical results are to have this number to help track the information about the sample. The parameters for which the values will be determined during the pre-acceptance procedures are provided in Section 2.0. The analytical methods used to determine the values of these parameters are provided in Section 3.0.

### 8.4.2 Incoming Load:

The procedures for obtaining a representative sample of a waste during the incoming load period is provided in Section 4.0 of the WAP. Section 4.0 includes descriptions of the types of sampling equipment and other considerations regarding sampling.

When a suitable off-site laboratory performs the incoming load analysis, ~~SKW~~CHK will review the report for certification of what standard analytical method was used to obtain the results. If a non-standard method was used, documentation must be provided to support the validity of the data.

## 8.5 Calibration Procedures and Frequencies:

Any analytical instrument used to generate data must be calibrated to ensure that accuracy is within acceptable limits. The laboratory analyst is responsible for ensuring that the proper standard is used in performing the calibration.

The frequency of calibration is determined by several factors (e.g., instrument stability, accuracy of data required, methodology employed). Calibration schedules are determined around a nominal period and increased/decreased to fit the requirements of a given test. The calibration schedule is always biased toward an increased frequency.

Unless otherwise stated in this QA/QC Plan, the method and frequency of calibration will be performed as defined in the analytical methods used.

### 8.5.1 pH/Selective Ion Meters:

The pH meter will be standardized at two points with reference buffer solutions (generally pH 4, pH 7 or pH 10). The calibration will be checked with another buffer from a source different from the calibration buffers; this buffer will be called the Continuing Calibration Verification (CCV) buffer. The CCV buffer will be read after initial or any subsequent calibration reading with an acceptable tolerance of +/- 0.5 pH units from the true value. If the CCV reading is not within the tolerance limit the instrument will be recalibrated. The CCV will be reanalyzed after each sample analysis and recalibration will be required if the reading falls outside of the +/- 0.5 pH units tolerance limit. The pH meter will be calibrated daily prior to the start of any pH measurements.

### 8.5.2 Balances:

Balances will be of a type appropriate for the accuracy of the weighing to be performed. Balances available may include single pan analytical and single pan top-loading. The analytical balances will be placed on a stable surface and the level checked and adjusted as necessary.

Balance calibrations will be checked with standard weights as appropriate for the routine use of that balance. The results of these checks will be recorded. Performance of any service will be recorded in the instrument log book.

### 8.5.3 Other Instrumentation:

~~SKW~~CHK will include a laboratory equipped to perform, at a minimum, the standard test methods and unique test methods listed in Table C.2. Calibration procedures and frequencies for instrumentation not listed in the WAP will be performed according to the manufacturer's instructions or the applicable reference methodology.

## 8.6 Analytical Procedures:

Standard analytical methods or methods developed by ~~SKW and Safety-Kleen~~CHK and Clean Harbors will be used for determining the value of selected parameters. The Technical Manager may make minor modifications to the method, as necessary, while keeping within the intent of the method. The ~~Safety-Kleen and SKW~~Clean Harbors and CHK analytical methods are provided in Attachment C-C. The standard methods will be obtained from such sources as the following.

- "Test Methods for Evaluating Solid Waste", SW-846, in effect as of Jan. 31, 1992, EPA, Office of Water and Waste Management, Washington, D.C. 20406.
- "Annual Book of ASTM Standards", American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.
- Standard Methods for the Examination of Water and Waste Water", American Public Health Association.
- "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, EPA, Environmental Monitoring and Support Lab, Cincinnati, Ohio 45268.

- Title 40 of the Code of Federal Regulations, Parts 260-268 (1991 edition).

## 8.7 Data Reduction, Validation, and Reporting:

In the process of relating a measurement to the concentration of an analyte in the sample, certain guidelines must be followed to avoid distortion of the analytical value through the calculation process. Calculations will follow generally accepted rounding and significant figure rules.

Raw data and calculations are recorded by the analyst on a data sheet. The data sheet will include:

- the test performed;
- sample information such as volumes, weight, and dilutions;
- the analyst's identity;
- the date samples were prepared and/or analyzed; and
- sample results.

## 8.8 Internal Quality Control Checks:

### 8.8.1 Methods:

The laboratory uses only quality control methods which are based on those recognized by sources such as National Institute of Standards and Technology (NIST) or American Society for Testing and Materials (ASTM).

### 8.8.2 Spike Samples:

The sample resulting from the addition of a known amount of analyte into a portion of a previously analyzed sample is called a spike sample. The data resulting from the analysis of the spike sample can be evaluated to determine the accuracy of the analytical method as well as the impact of interferences in the sample. Accuracy is determined by percent recovery comparing the result of the analysis of the spike sample with the results of the original sample. Poor recoveries may indicate interferences in the sample or an inappropriate application of a test for that sample type.

When appropriate, a method should be evaluated using a spike control (method spike). A spike control is a blank matrix (deionized water or similar analyte-free matrix) spiked with a known amount of the analyte(s) of interest. The recovery of the analyte will be maximized under these conditions and will indicate the performance of the method based upon recovery under ideal conditions.

After a method has been proven effective using a spike control, the ongoing process is monitored with spike samples. Spike samples should be analyzed at a minimum frequency of five (5) percent (e.g., one (1) of every twenty (20) samples). For tests that are run infrequently, spikes should be analyzed with every batch. To eliminate systematic errors, the source of the spiking material should be independent of the analytical method's routine calibration material.

After a sufficient number of recoveries for a given parameter have been accumulated, control limits will be established. The precision and accuracy objectives provided in Table C.4 will be updated periodically to reflect the new control limits. Recoveries which exceed the control limits indicate the need to reanalyze the associated sample batch. Exceptions may be documented by respiking/reanalysis and written comment.

### 8.8.3 Replicate Samples:

Replicate samples help evaluate the precision of a method and quantify the uncertainty of an analytical value. Replicates can exist in two forms, replicate sample analysis or replicate spiked sample analysis. If no analytes are expected to be found in an analysis it is better to choose to do replicate spiked samples.

Replicate samples, usually a duplicate, are to be analyzed at a minimum frequency of 5% (1 of every 20 samples). For tests which are run infrequently (e.g., once a month), duplicates will be analyzed with each batch.

After a sufficient number of replicates for a given parameter have been accumulated, control limits will be established. The precision and accuracy objectives provided in Table C.4 will be updated periodically to reflect the new control limits. Replicates which exceed the control limits indicate the need to reanalyze the associated sample batch. Exceptions may be documented by respiking/reanalysis and written comment on the laboratory bench sheet.

### 8.8.4 Blanks:

Blanks demonstrate that the method is free from interferences or allow the analyst to monitor the background and keep it from reaching levels which would interfere with the detection and quantification of the target analytes. However, not all methods are amenable to blanks (e.g., specific gravity).

Blanks also serve to evaluate the reagents used for contamination. If a reagent is found to be contributing unacceptable quantities of analyte or interference into the measurement system, it needs to be replaced with a higher grade and interferent-free material.

Blanks are to be run once in every twenty (20) samples or with each sample batch, whichever is more frequent. Analyte concentration in the blank should not exceed five (5) times the method detection limit.

If the level of blank contamination is constant and can be controlled, appropriate control limits can be established. Blank values must be recorded on an ongoing basis in this case.

### 8.8.5 Calibration Materials:

Quantifying the amount of an analyte in a sample is dependent on the reference used. A value can only be as good as the standard to which it is compared. Calibration materials must be of known purity and composition.

When a laboratory standard is created, it must be compared to an existing standard to insure it is within acceptable tolerances. This may involve the use of a Standard Reference Material (SRM) from the National Institute of Standards and Technology (NIST), EPA, or another source which can be traced back to NIST or EPA.

Quality control samples from the EPA or similar agency/organization (e.g., NIST) can be used to evaluate the accuracy of a standard and/or instrument calibration.

## 8.9 Performance and System Audits:

### 8.9.1 Performance Audits:

These audits involve the use of blind samples given to an analyst to evaluate the accuracy and precision of an analysis. The term blind (sometimes called single blind) means the analyst is aware that these samples are spikes, but is not aware of the concentration. These audits will be coordinated by the Technical Manager on an annual basis.

Major defects (e.g., a finding of a chemist not analyzing quality control samples, improper calibration procedures being used) which are discovered by these studies are investigated and appropriate corrective action applied.

### 8.9.2 System Audits:

System audits evaluate the laboratory staff's capability to produce good data. These audits allow the Technical Manager to judge whether or not the quality control practices are being followed and are effective. The system audits are conducted by the Technical Manager at least annually. The results of these audits require a response from the laboratory staff listing any corrective actions taken to remove defects.

### 8.10 Preventive Maintenance:

The manufacturer's manual for a particular instrument will be consulted for operating instructions. Maintenance schedules as recommended by the manufacturer will be followed as applicable. Maintenance will be properly recorded in the instrument maintenance record.

### 8.11 Procedures Used to Assess Data Precision, Accuracy, and Completeness:

#### 8.11.1 Method Spike Recoveries:

Method spike recoveries will be used when testing new procedures and training new analysts. The spikes will usually be made at levels appropriate for the analysis (approximately ten (10) times the estimated detection limit).

Matrix spike samples will be analyzed along with sample batches to estimate the accuracy of the analysis. The recovery will be within the 95% confidence interval (i.e., plus or minus two (2) standard deviations) for historical data.

### 8.11.2 Replicates (Includes Matrix Spike Duplicates):

Replicates will be analyzed along with sample batches to estimate the precision of the analysis. In lieu of historical data, the Relative Percent Difference (RPD) shall be less than or equal to twenty (20) percent (providing the results are at least ten (10) times greater than analytical detection limit) unless the QA/QC is dictated in the method.

### 8.11.3 Instrument Calibration:

Instruments will be calibrated with at least three (3) standards (where applicable). Linear regression is the preferred technique to analyze calibration data. In this case the correlation coefficient must meet or exceed the critical value for a 95% confidence interval.

In cases where it might be deemed more suitable to use another method for determining calibration precision (such as computing %RSD of Relative Response Factor values), appropriate confidence limits will be set per method specifications.

### 8.11.4 General Laboratory Parameters:

Within the laboratory there are numerous other parameters to be evaluated. The objective for any control limits based on historical data will be the 95% confidence interval (mean plus or minus two (2) standard deviations). Other values may have set limits based on method specifications as applicable.

## 8.12 Corrective Action:

When a control limit is exceeded, the analyst will stop the analysis and investigate the problem. When appropriate, the analyst must demonstrate by analysis that the problem has been corrected. When the cause for the exceedance has been identified and corrected, all data generated by that analysis since the last "in-control" analysis is suspect; all samples analyzed for the failing method should be reanalyzed. If the error can be attributed to a specific event, all data generated since the last "in-control" event must be reevaluated. If the QA failure can be attributed to sample rather than method failure (e.g., matrix effects), the data from that sample, and like samples are suspect and the data from those samples should be flagged or an alternate method used. In this case, other sample data generated concurrently can be reported. All QA failures and the resulting corrective action must be documented in the operating record.

### 8.12.1 Instrument Calibration Checks:

An instrument calibration check is the repetitive analysis of a given standard to ensure consistent instrument operation from day to day. Some methods utilize specific procedures to evaluate this check. If the value exceeds control limits, the analysis must be stopped and corrective action implemented.

### 8.12.2 Spike Recoveries:

Percent recoveries for matrix spikes and/or surrogate spikes are monitored by the analysts and must be within the control limits established by multiple analyses under similar conditions.

Outlier values must be documented with an explanation. Some problems may be deemed an unavoidable part of normal operation. Other problems are indicative of the need for reextraction or reanalysis. Corrective actions will be documented. In lieu of historical data, when sufficient data have been collected, ~~SKW~~CHK may utilize new control limit criteria.

If matrix effects are suspected as the cause of low spike recovery, the same sample is to be re-spiked once. If the recovery is still low, matrix interference can be assumed. Matrix effects can be overcome by changing the point of spike addition in the case of metals (spiking at the instrument rather than at the processing step), by diluting the sample to overcome the interference, or by the use of an alternate analytical method or technique. If the interference can not be overcome, the data must be flagged and the low recovery must be taken into account in any decision regarding that sample.

**8.12.3 Duplicate:**

Relative Percent Difference (RPD) criteria are used to evaluate duplicate analyses. The analyst must monitor this value and document the cause of an outlier. The spiking levels for Matrix Spike/Matrix Spike Duplicate should be at least two (2) times the native levels and at least ten (10) times the Method Detection Limit. Poor precision at low concentrations can contribute significantly to the inaccurate determination of RPD.

### 8.12.4 Performance Audits:

Performance audits involve the use of blind samples given to an analyst to evaluate the accuracy of an analysis. Major defects which are brought to light by these studies are investigated and appropriate corrective action is taken (e.g., retraining analysts or reanalysis of spike samples). Corrective actions are reported to the Technical Manager.

### 8.12.5 Method Blanks:

Reagents, process chemicals and laboratory glassware must be monitored for each sample batch to determine their contribution or impact on the analyte concentration. If the Method Blank exceeds the control limit, the analysis must be stopped and the source of the blank contribution identified and corrected. If the blank problem is identified to be universal, once the problem has been rectified, all samples using those chemicals or glassware must be reanalyzed.

### 8.13 Quality Assurance Reports to Management:

Oral and/or written reports of the results of inspection and other major problems will be provided to the Technical Manager. Other reports will be provided at his/her request.

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## List of~~Appendices~~~~List of~~ Appendices



## Acronym~~Table~~~~Acronym~~ Table

~~Laidlaw Environmental Services (Wichita) (LESW)~~Clean Harbors Kansas, LLC (CHK)
Kansas Administrative Regulations (KAR)
Resource Conservation and Recovery Act (RCRA)
Title 40 of the Code of Federal Regulations (40 CFR)
Waste Analysis Plan (WAP)
Environmental Protection Agency (EPA)
Toxic Substances Control Act (TSCA)
Polychlorinated Biphenyl (PCB)

## C. Waste Characterization: 40 CFR Parts 261, 262, 264, 268 and 270

The purpose of this section, Waste Characterization, is to provide a general description of the waste types anticipated for management, and the sampling and analytical procedures to be implemented, at ~~Laidlaw~~Clean Harbors ~~Environmental Services (Wichita) (LESW).~~Kansas, LLC. This section is provided to fulfill the requirements of the Kansas Administrative Regulations (KAR), and 40 CFR Parts 261, 262, 264, 268, and 270. The KAR incorporate, with few additions, the RCRA regulations contained in 40 CFR Parts 260 through 270. Therefore, this section will refer only to the federal regulations.

This section contains a description of the provisions for waste sampling and analysis related to the management of wastes at ~~LESW.~~CHK. These provisions have also been incorporated into a document referred to as the Waste Analysis Plan (WAP), which has been provided as Appendix C-A. The terms used in Section C will have the same meaning as those defined in the WAP.

## C-1 Chemical and Physical~~Analysis:C-1 Chemical and Physical~~ Analysis: 40 CFR 264.13(a) and 270.14(b)(2)

~~LESW~~CHK has identified wastes which are acceptable for management at ~~LESW,~~CHK, and wastes which will not be accepted for management at ~~LESW.~~CHK. Wastes in these categories are identified below.

?. Wastes Acceptable for Management: Materials acceptable for management at ~~LESW~~CHK will include solid wastes and hazardous wastes. There are two (2) general categories of hazardous wastes according to 40 CFR 261.3. These categories are:

?. Characteristic Wastes: Characteristic wastes exhibit any hazardous characteristic identified in 40 CFR Part 261, Supbart C. The characteristics are ignitability, corrosivity, reactivity, or toxicity.

?. Listed Wastes: Listed wastes include those wastes listed in 40 CFR Part 261, Subpart D.

These two (2) categories include "mixture rule" and "derived from rule" wastes which are described below.

~~?~~. Mixture Rule Wastes: Mixture rule wastes are:

~~?~~. a mixture of a solid waste and a characteristic waste unless the mixture no longer exhibits any hazardous characteristic, or

~~?~~. a mixture of a solid waste and one or more listed hazardous wastes.

~~?~~. Derived From Rule Wastes: Wastes subject to the derived from rule include any waste generated from the treatment, storage, or disposal of a hazardous waste, including any sludge, spill residue, or leachate.

Attachment C-B to the WAP contains a list of hazardous wastes which may be received at ~~LESW.~~CHK. The wastes listed in Attachment C-B are referred to by EPA Hazardous Waste Number and by Hazard Code. The Hazard Code is used by EPA to indicate if the waste is reactive (R), toxic (T), corrosive (C), ignitable (I), an acute hazardous waste (H), or whether the waste exhibits the Toxicity Characteristic (E). The basis for designating these wastes as hazardous is provided in 40 CFR Part 261, Appendix VII.

The Hazardous Waste Numbers further classify the wastes. Hazardous Waste Numbers D001 through D043 refer to the "characteristic wastes." D001 represents wastes that are ignitable in character; D002, those that are corrosive; and D003, those that are reactive. Wastes whose extracts contain concentrations is specific inorganic or organic constituents above a specified level are assigned one of the numbers D004 through D043.

"Listed wastes" include four (4) groups of hazardous waste numbers. Hazardous wastes generated from non-specific industry sources such as degreasing and electroplating operations are listed with numbers beginning with the letter "F" (e.g., F001). Hazardous wastes from specific generating sources such as petroleum refining are assigned numbers beginning with the letter "K" (e.g., K048). Hazardous waste numbers beginning with "P" or "U" represent waste commercial chemical products and manufacturing chemical intermediates (whether on- or off-specification).

The wastes accepted at ~~LESW~~CHK will vary considerably in both composition and form. Various organic and inorganic constituents may be present in the wastes. Wastes will be liquid, solid, or multi-phasic. General waste descriptions include hazardous wastes of the following types: contaminated wastewaters, spent catalysts, electroplating wastes, metal-contaminated sludges, spent-solvent residuals, off-specification ~~specification~~ chemicals, and a variety of other waste types.

Each waste stream will be characterized prior to acceptance for management at the facility following the procedures described in Section 5.0 of the WAP. This pre-acceptance characterization will be used to determine the acceptability of waste streams for management at ~~LESW.~~CHK. Profiles and other analytical data (as required) are maintained in the operating record for three years or longer.

~~7~~. Waste Prohibited from Management: Materials which will not be accepted for management at ~~LESW~~CHK include, but are not limited to, the following.

~~7~~. Dioxin containing hazardous wastes identified by EPA Hazardous Waste Numbers F020, F021, F022, F023, F026, F027 and F028.

~~7~~. Regulated radioactive wastes and materials.

~~7~~. Infectious medical wastes.

~~7~~. TSCA regulated PCBs.

**C-1a Receiving and Acceptance~~Criteria:C-1a Receiving and Acceptance~~ Criteria: 40 CFR 264.13(a), 264.172, 264.177, 264.191(a), 270.15(b)(1) and (d)**

Prior to accepting a waste stream for management at ~~LESW,~~CHK, the waste will be subject to the pre-acceptance procedures. The pre-acceptance procedures are described in Section 5.0 of the WAP. As part of these procedures, each waste stream will be evaluated for acceptability for management at ~~LESW.~~CHK. The evaluation will be based on the characterization provided by a review of information about the waste as provided by the generator, or the value of, or a range of values for, a set of material parameters. A rationale for the selection of these parameters is provided in Section 2.0 of the WAP.

Waste shipments arriving at the facility for management will be subject to the incoming load procedures. The incoming load procedures are described in Section 6.0 of the WAP. As part of these procedures, each waste stream will be evaluated for conformity with the description of the waste determined during the pre-acceptance procedures.

There are several sampling and analysis considerations with respect to the management of wastes at ~~LESW.~~CHK. These are described in Sections 6.0 and 7.0 in the WAP. These considerations include identification of waste wit the characteristics of ignitability, corrosivity, or reactivity; waste which may be incompatible with other wastes; and waste which may be incompatible with the container or tank in which it is stored.

**C-2 Waste Analysis~~Plan:C-2 Waste Analysis~~ Plan: 40 CFR 264.13(b) and (c), 268.7, and 270.14(b)(3)**

A copy of the WAP is provided as Appendix C-A. The WAP describes the procedures used to obtain chemical and physical information and data on the wastes to insure proper management and conformance with applicable land disposal restrictions. These procedures include:

- pre-acceptance procedures (Section 5.0 of the WAP);
- incoming load procedures (Section 6.0 of the WAP); and
- treatment, storage, and other management considerations (Section 7.0 of the WAP).

**C-2a Parameters and~~Rationale:C-2a Parameters and~~ Rationale: 40 CFR 264.13(b)(1)**

General waste characterizations or profiles will first be developed by determining the value of, or the range of values for, a given set of parameters. These parameters are referred to as "mandatory' parameters. The list of mandatory parameters for the pre-acceptance and incoming load procedures is provided in Section 2.0 of the WAP.

In addition to performing analysis for the mandatory parameters, the values of other parameters may be determined at any time prior to, or during, management of the waste at ~~LESW~~CHK to more fully define waste characteristics. Since these parameters are discretionary, they are referred to as "supplemental" parameters. Examples of supplemental parameters are provided in Section 2.0 of the WAP.

The rationale for selecting waste characterization parameters used during pre-acceptance and incoming load procedures is also provided in Section 2.0 of the WAP.

## C-2b ~~TestMethods: C-2b~~ Test Methods: 40 CFR 264.13(b)(2)

The typical analytical methods used to obtain the values of the mandatory parameters are described in Section 3.0 of the WAP. As new analytical procedures are developed, these procedures may be adopted and the WAP updated accordingly, as provided in 40 CFR 270.42.

**C-2c Sampling~~Methods:C-2c~~ ~~Sampling~~ Methods: 40 CFR Part 261, Appendix I, and 264.13(b)(3)**

Section 4.0 of the WAP presents methods to be utilized by ~~LESW~~CHK to obtain a representative sample of wastes. These methods will apply to waste generated off-site (when sampled by LES) as well as facility generated waste. Discussions of the circumstances under which the sampling will be performed are presented in Sections 5.0 through 7.0 of the WAP. The specific sampling methods selected are dependent on both the nature of the waste and the type of container or tank that the waste is in.

Other considerations with respect to sampling are also described in Section 4.0 of the WAP. These other considerations include:

- Sampling Safety Precautions;
- Sampling Method References;
- Sampling Locations;
- Sampling Equipment;
- Frozen Shipments or Samples;
- Cleaning of Sampling Apparatus;
- Management of Samples After Analysis;
- Remote Project Sampling and/or Analysis;

- ~~?~~. Lab Packs;
- ~~?~~. Nonhazardous Wastes; and
- ~~?~~. Vitrified, Cemented, and Other Materials Exhibiting High Structural Integrity.

**C-2d Frequency of~~Analysis:C-2d~~ ~~Frequency of~~ Analysis: 40 CFR 264.13(b)(4)**

An analysis of the wastes may be conducted at selected management stages including the following.

- ~~?~~. Before a waste stream is accepted (pre-acceptance);
- ~~?~~. When a waste arrives (incoming load);
- ~~?~~. At selected management stages (in-process); and
- ~~?~~. A minimum of every two years (recharacterization).

The decision to accept a waste for management at ~~LESW~~CHK will be in part based on a characterization or profile of the waste. At a minimum, this characterization is accomplished through knowledge of the waste or laboratory analysis of the waste during the pre-acceptance procedure. ~~LESW~~CHK will recharacterize incoming waste streams at least every two years to verify that the original characterization of the waste is still accurate. Any incoming load accepted at ~~LESW~~CHK must have been characterized (or recharacterized) within the last twenty-four (24) months. A sample of an incoming load may be used for the recharacterization. ~~LESW~~CHK may also repeat the pre-acceptance characterization if:

- a generator notifies that the process generating the waste has changed;
- the incoming load is outside of the acceptance tolerance ranges provided in the WAP, or
- it is suspected that a particular waste shipment differs from the pre-acceptance characterization.

Any waste characterization or recharacterization that assigns or removes a hazardous waste characteristic code for a Kansas generated waste shall be performed by a Kansas certified laboratory in accordance with KAR 28-31-4(b)(3).

**C-2e Additional Requirements for Wastes Generated~~Off-site: C-2e Additional Requirements for Wastes Generated~~ Off-site: 40 CFR 264.13(b)(5), 264.13(c), and 264.73(a) and (b)**

Using the information available from the generator, ~~LESW~~CHK will develop a characterization or profile of the waste stream during the pre-acceptance procedures. The activities involved with characterizing a waste for pre-acceptance purposes are provided below; additional description is provided in the WAP.

~~?~~. Requirements of the Generator: The generator of a waste stream is required to provide information on the properties of the waste or the process generating the waste as described in Section 5.0 of the WAP.

~~7~~. Analysis for Parameters (Mandatory and Supplemental): ~~LESW~~CHK may confirm certain waste characterization data supplied by the generator by analyzing the representative sample(s) of the waste for one or more of the mandatory or supplemental pre-acceptance parameters.

~~?~~. Evaluation: After completing the pre-acceptance waste characterization, the acceptability of the waste for management at ~~LESW~~CHK will be determined. This determination will be based on permit conditions, availability of proper treatment techniques, and storage and off-site disposal capacities.

**C-2f Additional Requirements for Handling Ignitable, Reactive, or Incompatible~~Wastes:C-2f Additional Requirements for Handling Ignitable, Reactive, or Incompatible~~ Wastes: 40 CFR 264.13(b)(6), and 264.17**

Ignitable, reactive, and incompatible wastes will be received at ~~LESW.~~CHK. Provisions for the identification of wastes with these characteristics have been included in the WAP. These provisions are described in Sections 5.0, 6.0, and 7.0 of the WAP.

## C-3 Additional Waste Characterization Requirements Pertaining to the Land Disposal~~Restrictions:C-3 Additional Waste Characterization Requirements Pertaining to the Land Disposal~~ Restrictions: 40 CFR 264.13 (a)(1), 264.13(b)(6), 268.7, 270.14(b)(3)

Information submitted by the generator (or a representative of the generator) for the waste streams managed at ~~LESW~~CHK may include notifications required by 40 CFR 268.7, laboratory analytical data, or information based on knowledge of the waste or of the process generating the waste. This information will be used to determine if the waste is subject to the restrictions on the placement of hazardous waste in a land-based disposal unit (i.e., restricted under 40 CFR Part 268). Provisions for the identification and analysis of wastes which are subject to these restrictions are described in Sections 5.0, 6.0, and 7.0 of the WAP.

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|

**Hazardous Waste by Characteristic:**

| | |
|---|---|
| D001 (I) | Ignitability |
| D002 (C) | Corrosivity |
| D003 (R) | Reactivity |
| D004 (E) | Arsenic |
| D005 (E) | Barium |
| D006 (E) | Cadmium |
| D007 (E) | Chromium |
| D008 (E) | Lead |
| D009 (E) | Mercury |
| D010 (E) | Selenium |
| D011 (E) | Silver |
| D012 (E) | Endrin (1,2,3,4,10,10-hexachloro-1,7 epoxy-1,4,4a,5,6,;7,8,8a-octahydro-1,4 endo,endo-5, 8-dimeth-ano-naphthalene) |
| DO13 (E) | Lindane (1,2,3,4,5,6, hexa-chloro-cyclohexane, gamma isomer |
| D014 (E) | Methoxychlor (1,1,1-Trichloro- 2,2-bis [p-methoxyphenyl]ethane |
| D015 (E) | Toxaphene ($C_{10}H_{10}Cl_8$, technical chlorinated camphene, 67-69 percent chlorine) |
| D016 (E) | 2,4-D (2,4 dichlorophenoxyacetic acid) |
| D017 (E) | 2,4,5-TP Silvex (2,4,5-trichloro-phenoxypropionic acid) |
| D018 (E) | Benzene |
| D019 (E) | Carbon tetrachloride |
| D020 (E) | Chlordane |
| D021 (E) | Chlorobenzene |
| D022 (E) | Choroform |
| D023 (E) | o-Cresol |
| D024 (E) | m-Cresol |
| D025 (E) | p-Cresol |
| D026 (E) | Cresol |
| D027 (E) | 1,4-Dichlorobenzene |
| D028 (E) | 1,2-Dichloroethane |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| D029 (E) | 1,1-Dichloroethylene |
| D030 (E) | 2,4-Dinitrotoluene |
| D031 (E) | Heptachlor (and its hydroxide) |
| D032 (E) | Hexachlorobenzene |
| D033 (E) | Hexachloro-1,3-butadiene |
| D034 (E) | Hexachloroethane |
| D035 (E) | Methyl ethyl ketone |
| D036 (E) | Nitrobenzene |
| D037 (E) | Pentachlorophenol |
| D038 (E) | Pyridine |
| D039 (E) | Tetrachloroethylene |
| D040 (E) | Trichloroethylene |
| D041 (E) | 2,4,5-Trichlorophenol |
| D042 (E) | 2,4,6-Trichlorophenol |
| D043 (E) | Vinyl Chloride |

Basis for listing or class of hazardous waste:

| | |
|---|---|
| (I) Ignitable | Toxicity Characteristic Waste (E) |
| (C) Corrosive | Acute Hazardous Waste (H) |
| (R) Reactive | Toxic Waste (T) |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|

**<u>Hazardous Wastes from Non-specific Sources:</u>**

| | |
|---|---|
| F001 (T) | The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004 and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures. |
| F002 (T) | The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-triflouroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001,F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures. |
| F003 (I) | The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| | mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and, a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures. |
| F004 (T) | The following spent non-halogenated solvents: Cresols and cresylic acid, nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures. |
| F005 (I,T) | The following spent non-halogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, and pyridine; benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures. |
| F006 (T) | Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc- |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| | aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum. |
| F007 (R,T) | Spent cyanide plating bath solutions from electroplating operations |
| F008 (R,T) | Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process. |
| F009 (R,T) | Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process. |
| F010 (R,T) | Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process. |
| F011 (R,T) | Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations |
| F012 (T) | Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process. |
| F019 (T) | Wastewater treatment sludges from the chemical conversion coating of aluminum. |
| F024 (T) | Process wastes, including but not limited to distillation residues, heavy ends, tars, and reactor clean-out wastes from the production of chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| | having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in 261.31 or 261.32). |
| F025 (T) | Condensed light ends, spent filters and filter aids and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five with varying amounts and positions of chlorine substitution. |
| F032 (T) | Wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with ' 261.35 of this chapter and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediments sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol. |
| F034 (T) | Wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| | use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol. |
| F035 (T) | Wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol. |
| F037 (T) | Petroleum refinery primary oil/water/solids separation sludge--Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include but are not limited to, those generated in: oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in ' 261.31(b)(2) (including sludges generated in one or more additional units after |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| | wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing. |
| F038 (T) | Petroleum refinery secondary (emulsified) oil/water/solids separation sludge--Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in ' 261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048, and K051 wastes are not included in this listing. |
| F039 [1] | Leachate resulting from the treatment, storage, or disposal of wastes classified by more than one waste code under Subpart D, or from a mixture of wastes classified under |

[1]All constituents for which treatment standards are specified for multi-source leachate (wastewaters and non-wastewaters) under 40 CFR 268.43(a), Table CCW.

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| | Subparts C and D of this part. (Leachate resulting from the management of one or more of the following EPA Hazardous Wastes and no other hazardous wastes retains its hazardous waste code(s): F020, F021, F022, F023, F026, F027, and/or F028). |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|

**Hazardous Wastes from Specific Sources:**

| | |
|---|---|
| K001 (T) | Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol. |
| K002 (T) | Wastewater treatment sludge from the production of chrome yellow and orange pigments. |
| K003 (T) | Wastewater treatment sludge from the production of molybdate orange pigments. |
| K004 (T) | Wastewater treatment sludge from the production of zinc yellow pigments. |
| K005 (T) | Wastewater treatment sludge from the production of chrome green pigments. |
| K006 (T) | Wastewater treatment sludge from the production of chrome oxide green pigments. |
| K007 (T) | Wastewater treatment sludge from the production of iron blue pigments. |
| K008 (T) | Oven residue from the production of chrome oxide green pigments. |
| K009 (T) | Distillation bottoms from the production of acetaldehyde from ethylene. |
| K010 (T) | Distillation side cuts from the production of acetaldehyde from ethylene. |
| K011 (R,T) | Bottom stream from the wastewater stripper in the production of acrylonitrile. |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| K013 (R,T) | Bottom stream from the acetonitrile column in the production of acrylonitrile. |
| K014 (T) | Bottoms from the acetonitrile purification column in the production of acrylonitrile. |
| K015 (T) | Still bottoms from the distillation of benzyl chloride. |
| K016 (T) | Heavy ends or distillation residues from the production of carbon tetrachloride. |
| K017 (T) | Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin. |
| K018 (T) | Heavy ends from the fractionation column in ethyl chloride production. |
| K019 (T) | Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production. |
| K020 (T) | Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production. |
| K021 (T) | Aqueous spent antimony catalyst waste from fluoromethanes production. |
| K022 (T) | Distillation bottom tars from the production of phenol/acetone from cumene. |
| K023 (T) | Distillation light ends from the production of phthalic anhydride from naphthalene. |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| K024 (T) | Distillation bottoms from the production of phthalic anhydride from naphthalene. |
| K025 (T) | Distillation bottoms from the production of nitrobenzene by the nitration of benzene. |
| K026 (T) | Stripping still tails from the production of methy ethyl pyridines. |
| K027 (R,T) | Centrifuge and distillation residues from toluene diisocyanate production. |
| K028 (T) | Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane. |
| K029 (T) | Waste from the product steam stripper in the production of 1,1,1-trichloroethane. |
| K030 (T) | Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene. |
| K031 (T) | By-product salts generated in the production of MSMA and cacodylic acid. |
| K032 (T) | Wastewater treatment sludge from the production of chlordane. |
| K033 (T) | Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane. |
| K034 (T) | Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane. |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| K035 (T) | Wastewater treatment sludges generated in the production of creosote. |
| K036 (T) | Still bottoms from toluene reclamation distillation in the production of disulfoton. |
| K037 (T) | Wastewater treatment sludges from the production of disulfoton. |
| K038 (T) | Wastewater from the washing and stripping of phorate production. |
| K039 (T) | Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate. |
| K040 (T) | Wastewater treatment sludge from the production of phorate. |
| K041 (T) | Wastewater treatment sludge from the production of toxaphene. |
| K042 (T) | Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T. |
| K043 (T) | 2,6-Dichlorophenol waste from the production of 2,4-D. |
| K044 (R) | Wastewater treatment sludges from the manufacturing and processing of explosives. |
| K045 (R) | Spent carbon from the treatment of wastewater containing explosives. |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| K046 (T) | Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds. |
| K047 (R) | Pink/red water from TNT operations. |
| K048 (T) | Dissolved air flotation (DAF) float from the petroleum refining industry. |
| K049 (T) | Slop oil emulsion solids from the petroleum refining industry. |
| K050 (T) | Heat exchanger bundle cleaning sludge from the petroleum refining industry. |
| K051 (T) | API separator sludge from the petroleum refining industry. |
| K052 (T) | Tank bottoms (leaded) from the petroleum refining industry. |
| K060 (T) | Ammonia still lime sludge from coking operations. |
| K061 (T) | Emission control dust/sludge from the primary production of steel in electric furnaces. |
| K062 (C,T) | Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332). |
| K064 (T) | Acid plant blowdown slurry/sludge resulting from the thickening of blowdown slurry from primary copper production. |

Basis for listing or class of hazardous waste:

| | |
|---|---|
| (I) Ignitable | Toxicity Characteristic Waste (E) |
| (C) Corrosive | Acute Hazardous Waste (H) |
| (R) Reactive | Toxic Waste (T) |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| K065 (T) | Surface impoundment solids contained in and dredged from surface impoundments at primary lead smelting facilities |
| K066 (T) | Sludge from treatment of process wastewater and/or acid plant blowdown from primary zinc production. |
| K069 (T) | Emission control dust/sludge from secondary lead smelting. (Note: This listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further administrative action is taken. If EPA takes further action effecting this stay, EPA will publish a notice of the action in the Federal Register.) |
| K071 (T) | Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used. |
| K073 (T) | Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production. |
| K083 (T) | Distillation bottoms from aniline production. |
| K084 (T) | Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds. |
| K085 (T) | Distillation or fractionation column bottoms from the production of chlorobenzenes. |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| K086 (T) | Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead. |
| K087 (T) | Decanter tank tar sludge from coking operations. |
| K088 (T) | Spent potliners from primary aluminum reduction. |
| K090 (T) | Emission control dust or sludge from ferrochromiumsilicon production. |
| K091 (T) | Emission control dust or sludge from ferrochromium production. |
| K093 (T) | Distillation light ends from the production of phthalic anhydride from ortho-xylene. |
| K094 (T) | Distillation bottoms from the production of phthalic anhydride from ortho-xylene. |
| K095 (T) | Distillation bottoms from the production of 1,1,1-trichloroethane. |
| K096 (T) | Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane. |
| K097 (T) | Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane. |
| K098 (T) | Untreated process wastewater from the production of toxaphene. |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| K099 (T) | Untreated wastewater from the production of 2,4-D. |
| K100 (T) | Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting. |
| K101 (T) | Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds. |
| K102 (T) | Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds. |
| K103 (T) | Process residues from aniline extraction from the production of aniline. |
| K104 (T) | Combined wastewater streams generated from nitrobenzene/aniline production. |
| K105 (T) | Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes. |
| K106 (T) | Wastewater treatment sludge from the mercury cell process in chlorine production. |
| K107 (C,T) | Column bottoms from product seperation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazines. |
| K108 (I,T) | Condensed column overheads from product |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| | separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides. |
| K109 (T) | Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides. |
| K110 (T) | Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides. |
| K111 (C,T) | Product washwaters from the production of dinitrotoluene via nitration of toluene. |
| K112 (T) | Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene. |
| K113 (T) | Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation dinitrotoluene. |
| K114 (T) | Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene. |
| K115 (T) | Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of |

Basis for listing or class of hazardous waste:

| | |
|---|---|
| (I) Ignitable | Toxicity Characteristic Waste (E) |
| (C) Corrosive | Acute Hazardous Waste (H) |
| (R) Reactive | Toxic Waste (T) |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| | dinitrotoluene. |
| K116 (T) | Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine. |
| K117 (T) | Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene. |
| K118 (T) | Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene. |
| K123 (T) | Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salt. |
| K124 (T,C) | Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts. |
| K125 (T,C) | Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts. |
| K126 (T) | Baghouse dust and floor sweepings in milling and packaging operations from production or formulation of ethylenebisdithiocarbamic acid and its salts. |
| K131 (C,T) | Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide. |

Basis for listing or class of hazardous waste:

| | |
|---|---|
| (I) Ignitable | Toxicity Characteristic Waste (E) |
| (C) Corrosive | Acute Hazardous Waste (H) |
| (R) Reactive | Toxic Waste (T) |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| K132 (T) | Spent absorbent and wastewater separator solids from the production of methyl bromide. |
| K136 (T) | Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene. |
| K141 (T) | Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludges from coking operations). |
| K142 (T) | Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal. |
| K143 (T) | Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal. |
| K144 (T) | Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal. |
| K145 (T) | Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal. |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| K147 (T) | Tar storage tank residues from coal tar refining. |
| K148 (T) | Residues from coal tar distillation, including, but not limited to, still bottoms. |
| K149 (T) | Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. (This waste does not include still bottoms from the distillation of benzyl chloride). |
| K150 (T) | Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| K151 (T) | Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. |
| K156 (T) | Organic Waste (including heavy ends, still bottoms, light ends, spent solvents, filters, and decantates) from the production of carbamates and carbamoyl oximes. |
| K157 (T) | Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. |
| K158 (T) | Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. |
| K159 (T) | Organics from the treatment of thiocarbamate wastes. |
| K160 (T) | Solids (including filter wastes, separation solids, and spent catalysts) from the production of thiocarbamates and solids from the treatment of thiocarbamate wastes. |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| K161 (T) | Purification solids (including filtration, evaporation, and centrifugation solids), bag house dust and floor sweepings from the production of dithiocarbamate acids and their salts. (This listing does not include K125 or K126.) |
| K169 (T) | Crude oil tank sediment from petroleum refining operations. |
| K170 (T) | Clarified slurry oil sediment from petroleum refining operations. |
| K171 (R,T) | Spent hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurizefeeds to other catlaytic reactors (this listing does not include inert support media). |
| K172 (R,T) | Spent hydrorefining catalyst from petroleum refining operations. |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|

**Discarded Commercial Chemical Products, Off-Specification Species, Container Residues, and Spill Residues Thereof:**

| | |
|---|---|
| P001 (H) | Warfarin, & salts, when present at concentrations greater than 0.3%. |
| P002 (H) | 1-Acetyl-2-thiourea |
| P003 (H) | Acrolein |
| P004 (H) | Aldrin |
| P005 (H) | Allyl alcohol |
| P006 (R,T) | Aluminum phosphide |
| P007 (H) | 5-(Aminomethyl)-3-isoxazolol |
| P008 (H) | 4-Aminopyridine |
| P009 (R) | Ammonium picrate |
| P010 (T) | Arsenic acid $H_3AsO_4$ |
| P011 (T) | Arsenic pentoxide |
| P012 (T) | Arsenic trioxide |
| P013 (H) | Barium cyanide |
| P014 (T) | Benzenethiol |
| P015 (H) | Beryllium |
| P016 (H) | Methane, oxybis[chloro- |
| P017 (T) | Bromoacetone |
| P018 (H) | Brucine |
| P020 (H) | Dinoseb |
| P021 (H) | Calcium cyanide |
| P022 (T) | Carbon disulfide |
| P023 (H) | Chloroacetaldehyde |
| P024 (H) | p-Chloroaniline |
| P026 (H) | 1-(o-Chlorophenyl)thiourea |
| P027 (H) | 3-Chloropropionitrile |
| P028 (H) | Benzyl chloride |
| P029 (H) | Copper cyanide |
| P030 (T) | Cyanides (soluble cyanide salts) not otherwise specified. |
| P031 (H) | Cyanogen |
| P033 (H) | Cyanaogen chloride |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| P034 (T) | 2-Cyclohexyl-4,6-dinitrophenol |
| P036 (H) | Dichlorophenylarsine |
| P037 (H) | Dieldrin |
| P038 (T) | Diethylarsine |
| P039 (T) | Disulfoton |
| P040 (H) | O,O-Diethyl O-pyrazinyl phosphorothioate. |
| P041 (H) | Diethyl-p-nitrophenyl phosphate |
| P042 (H) | Epinephrine |
| P043 (H) | Diisopropylfluorophosphate (DFP) |
| P044 (T) | Dimethoate |
| P045 (H) | Thiofanox |
| P046 (T) | Benzeneethanamine, alpha,alpha-dimethyl- |
| P047 (H) | 4,6-Dinitro-o-cresol, and salts |
| P048 (H) | 2,4-Dinitrophenol |
| P049 (H) | Dithiobiuret |
| P050 (H) | Endosulfan |
| P051 (H) | Endrin |
| P054 (H) | Aziridine |
| P056 (H) | Fluorine |
| P057 (H) | Fluoroacetamide |
| P058 (H) | Fluoroacetic acid, sodium salt |
| P059 (H) | Heptachlor |
| P060 (H) | Isodrin |
| P062 (H) | Hexaethyl tetraphosphate |
| P063 (H) | Hydrogen cyanide |
| P064 (H) | Methyl isocyanate |
| P065 (R,T) | Mercury fulminate |
| P066 (H) | Methomyl |
| P067 (H) | 1,2-Propylenimine |
| P068 (H) | Methyl hydrazine |
| P069 (H) | 2-Methyllactonitrile |
| P070 (H) | Aldicarb |
| P071 (H) | Methyl parathion |
| P072 (H) | alpha-Naphthylthiourea |
| P073 (H) | Nickel carbonyl |
| P074 (H) | Nickel cyanide |

Basis for listing or class of hazardous waste:

(I) Ignitable
(C) Corrosive
(R) Reactive

Toxicity Characteristic Waste (E)
Acute Hazardous Waste (H)
Toxic Waste (T)

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| P075 (T) | Nicotine, and salts |
| P076 (T) | Nitric oxide |
| P077 (T) | p-Nitroaniline |
| P078 (H) | Nitrogen dioxide |
| P081 (R,T) | Nitroglycerine (R) |
| P082 (H) | N-Nitrosodimethylamine |
| P084 (H) | N-Nitrosomethylvinylamine |
| P085 (H) | Octamethylpyrophosphoramide |
| P087 (H) | Osmium tetroxide |
| P088 (H) | Endothall |
| P089 (T) | Parathion |
| P092 (H) | Phenylmercury acetate |
| P093 (H) | Phenylthiourea |
| P094 (T) | Phorate |
| P095 (T) | Phosgene |
| P096 (H) | Phosphine |
| P097 (H) | Famphur |
| P098 (H) | Potassium cyanide |
| P099 (H) | Potassium silver cyanide |
| P101 (H) | Propanenitrile |
| P102 (H) | Propargyl alcohol |
| P103 (H) | Selenourea |
| P104 (H) | Silver cyanide |
| P105 (H) | Sodium azide |
| P106 (H) | Sodium cyanide |
| P108 (T) | Strychnine and salts |
| P109 (H) | Tetraethyldithiopyrophosphate |
| P110 (H) | Tetraethyl lead |
| P111 (H) | Tetraethyl pyrophosphate |
| P112 (R) | Tetranitromethane |
| P113 (H) | Thallic oxide |
| P114 (H) | Thallium(I) selenite |
| P115 (H) | Thallium(I) sulfate |
| P116 (H) | Thiosemicarbazide |
| P118 (H) | Trichloromethanethiol |
| P119 (H) | Vanadic acid, ammonium salt |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| P120 (H) | Vanadium pentoxide |
| P121 (H) | Zinc cyanide |
| P122 (R,T) | Zinc phosphide $Zn_3P_2$ when present at concentrations greater than 10% |
| P123 (H) | Toxaphene |
| P127 | 7-Benzofuranol, 2,3-dihydro-2,2-dimethyl,methylcarbamate (Carbofuran) |
| P128 | Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester) (Mexacarbate) |
| P185 | 1,3-Dithiolane-2-carboxaldehyde, 2,4-dimethyl, O-[(methylamino)carbonyl]oxime (Tirpate) |
| P188 | Benzoic acid, 2-hydroxy, compd. with (3aS-cis)-1,2,3,3a,8,8a-hexahydro- 1,3a,8-trimethylpyrrolo[2,3-b]indol-5-yl methylcarbamate ester (1:1) (Physostigmine salicylate) |
| P189 | Carbamic acid,[(dibutylamino)thio]methyl-, 2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester (Carbosulfan) |
| P190 | Carbamic acid, methyl-, 3-methylphenyl ester (Metolcarb) |
| P191 | Carbamic acid, dimethyl-, 1-[(dimethylamino)carbonyl]-5-methyl-1H-pyrazol-3-yl ester (Dimetilan) |
| P192 | Carbamic acid, dimethyl-, 3-methyl-1-(1-methylethyl)-1H-pyrazol-5-yl ester (Isolan) |
| P194 | Ethanimidothioc acid, 2-(dimethylamino)-N-{[(methylamino)carbonyl]oxy}-2-oxo, methyl ester (Oxamyl) |
| P196 | Manganese, bis(dimethylcarbamodithioato-S,S')-(Manganese dimethyldithiocarbamate) |
| P197 | Methanimidamide, N,N-dimethyl-N'-[2- methyl-4-{[(methylamino)carbonyl]oxy}phenyl]-(Formparanate) |
| P198 | Methanimidamide, N,N-dimethyl-N'-[3-{[(methylamino)carbonyl]oxy}phenyl]-, |

Basis for listing or class of hazardous waste:

| | |
|---|---|
| (I) Ignitable | Toxicity Characteristic Waste (E) |
| (C) Corrosive | Acute Hazardous Waste (H) |
| (R) Reactive | Toxic Waste (T) |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| | monohydrochloride (Formetanate hydrochloride) |
| P199 | Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate (Methiocarb) |
| P201 | Phenol, 3-methyl-5-(1-methylethyl)-, methylcarbamate (Promecarb) |
| P202 | Phenol, 3-(1-methylethyl), methylcarbamate (Hercules AC-5727) |
| P203 | Propanal, 2-methy-2-(methylsulfonyl)-, O-[(methylamino)carbonyl] oxime (Aldicarb sulfone) |
| P204 | Pyrrolo(2,3-b)indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl, methylcarbamate (ester), (3aS-cis)- (Physostigmine) |
| P205 | Zinc, bis(dimethylcarbamodithioato-S,S')-, (Ziram) |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|

**Commercial Chemical Products, Manufacturing Chemical Intermediates, or Off-Specification Commercial Chemical Products:**

| | |
|---|---|
| U001 (I) | Ethanal |
| U002 (I) | Acetone |
| U003 (I,T) | Acetonitrile |
| U004 (T) | Acetophenone |
| U005 (T) | 2-Acetylaminofluorene |
| U006 (C,R,T) | Acetyl chloride |
| U007 (T) | Acrylamide |
| U008 (I) | Acrylic acid |
| U009 (T) | Acrylonitrile |
| U010 (T) | Mitomycin C |
| U011 (T) | Amitrole |
| U012 (I,T) | Aniline |
| U014 (T) | Auramine |
| U015 (T) | Azaserine |
| U016 (T) | Benz[c]acridine |
| U017 (T) | Benzal chloride |
| U018 (T) | Benz[a]anthracene |
| U019 (I,T) | Benzene |
| U020 (C,R) | Benzenesulfonyl chloride |
| U021 (T) | Benzidine |
| U022 (T) | Benzo[a]pyrene |
| U023 (C,R,T) | Benzotrichloride |
| U024 (T) | Dichloromethoxy ethane |
| U025 (T) | Dichloroethyl ether |
| U026 (T) | Chlornaphazin |
| U027 (T) | Dichloroisopropyl ether |
| U028 (T) | Diethylhexyl phthalate |
| U029 (T) | Methyl bromide |
| U030 (T) | Benzene, 1-bromo-4-phenoxy- |
| U031 (I) | n-Butyl alcohol |
| U032 (T) | Calcium chromate |
| U033 (R,T) | Carbon oxyfluoride |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| U034 (T) | Chloral |
| U035 (T) | Chlorambucil |
| U036 (T) | Chlordane, alpha & gamma isomers |
| U037 (T) | Chlorobenzene |
| U038 (T) | Chlorobenzilate |
| U039 (T) | p-Chloro-m-cresol |
| U041 (T) | Epichlorohydrin |
| U042 (T) | 2-Chloroethyl vinyl ether |
| U043 (T) | Vinyl chloride |
| U044 (T) | Chloroform |
| U045 (I,T) | Methyl chloride |
| U046 (T) | Chloromethyl methyl ether |
| U047 (T) | beta-Chloronaphthalene |
| U048 (T) | o-Chlorophenol |
| U049 (T) | Benzenamine, 4-chloro-2-methyl-, hydrochloride |
| U050 (T) | Chrysene |
| U051 (T) | Creosote |
| U052 (T) | Cresol (Cresylic Acid) |
| U053 (T) | Crotonaldehyde |
| U055 (I) | Cumene |
| U056 (I) | Cyclohexane |
| U057 (I) | Cyclohexanone |
| U058 (T) | Chclophosphamide |
| U059 (T) | Daunomycin |
| U060 (T) | DDD |
| U061 (T) | DDT |
| U062 (T) | Diallate |
| U063 (T) | Dibenz[a,h]anthracene |
| U064 (T) | Dibenzo[a,i]pyrene |
| U066 (T) | 1,2-Dibromo-3-chloropropane |
| U067 (T) | Ethylene dibromide |
| U068 (T) | Methylene bromide |
| U069 (T) | Dibutyl phthalate |
| U070 (T) | o-Dichlorobenzene |
| U071 (T) | m-Dichlorobenzene |
| U072 (T) | p-Dichlorobenzene |

Basis for listing or class of hazardous waste:

| | |
|---|---|
| (I) Ignitable | Toxicity Characteristic Waste (E) |
| (C) Corrosive | Acute Hazardous Waste (H) |
| (R) Reactive | Toxic Waste (T) |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| U073 (T) | 3,3'Dichlorobenzidine |
| U074 (I,T) | 1,4-Dichloro-2-butene |
| U075 (T) | Dichlorodifluoromethane |
| U076 (T) | Ethylidene dichloride |
| U077 (T) | Ethylene dichloride |
| U078 (T) | 1,1-Dichloroethylene |
| U079 (T) | 1,2-Dichloroethylene |
| U080 (T) | Methylene chloride |
| U081 (T) | 2,4-Dichlorophenol |
| U082 (T) | 2,6-Dichlorophenol |
| U083 (T) | Propylene dichloride |
| U084 (T) | 1,3-Dichloropropene |
| U085 (I,T) | 1,2:3,4-Diepoxybutane |
| U086 (T) | N,N-Diethylhydrazine |
| U087 (T) | O,O-Diethyl S-methyl dithiophosphate |
| U088 (T) | Diethyl phthalate |
| U089 (T) | Diethylstilbesterol |
| U090 (T) | Dihydrosafrole |
| U091 (T) | 3,3'-Dimethoxybenzidine |
| U092 (I) | Dimethylamine |
| U093 (T) | p-Dimethylaminoazobenzene |
| U094 (T) | 7,12-Dimethylbenz[a]anthracene |
| U095 (T) | 3,3'-Dimethylbenzidine |
| U096 (R) | alpha,alpha-Dimethylbenzylhydroperoxide |
| U097 (T) | Dimethylcarbamoyl chloride |
| U098 (T) | 1,1-Dimethylhydrazine |
| U099 (T) | 1,2-Dimethylhydrazine |
| U101 (T) | 2,4-Dimethylphenol |
| U102 (T) | Dimethyl phthalate |
| U103 (T) | Dimethyl sulfate |
| U105 (T) | 2,4-Dinitrotoluene |
| U106 (T) | 2,6-Dinitrotoluene |
| U107 (T) | Di-n-octyl phthalate |
| U108 (T) | 1,4-Dioxane |
| U109 (T) | 1,2-Diphenylhydrazine |
| U110 (I) | Dipropylamine |

Basis for listing or class of hazardous waste:

(I) Ignitable
(C) Corrosive
(R) Reactive

Toxicity Characteristic Waste (E)
Acute Hazardous Waste (H)
Toxic Waste (T)

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| U111 (T) | Di-n-propylnitrosamine |
| U112 (I) | Ethyl acetate |
| U113 (I) | Ethyl acrylate |
| U114 (T) | Ethylenebisdithiocarbamic acid, salts & esters |
| U115 (I,T) | Ethylene oxide |
| U116 (T) | Ethylenethiourea |
| U117 (I) | Ethyl ether |
| U118 (T) | Ethyl methacrylate |
| U119 (T) | Ethyl methanseulfonate |
| U120 (T) | Fluoranthene |
| U121 (T) | Methane, trichlorofluoro- |
| U122 (T) | Formaldehyde |
| U123 (C,T) | Formic acid |
| U124 (I) | Furan |
| U125 (I) | Furfural |
| U126 (T) | Glycidylaldehyde |
| U127 (T) | Hexachlorobenzene |
| U128 (T) | Hexachlorobutadiene |
| U129 (T) | Lindane |
| U130 (T) | Hexachlorocyclopentadiene |
| U131 (T) | Hexachloroethane |
| U132 (T) | Hexachlorophene |
| U133 (R,T) | Hydrazine |
| U134 (C,T) | Hydrogen fluoride |
| U135 (T) | Hydrogen sulfide |
| U136 (T) | Cacodylic acid |
| U137 (T) | Indeno[1,2,3-cd]pyrene |
| U138 (T) | Methyl iodide |
| U140 (I,T) | Isobutyl alcohol |
| U141 (T) | Isosafrole |
| U142 (T) | Kepone |
| U143 (T) | Lasiocarpine |
| U144 (T) | Lead acetate |
| U145 (T) | Lead phosphate |
| U146 (T) | Lead subacetate |
| U147 (T) | Maleic anhydride |

Basis for listing or class of hazardous waste:

(I) Ignitable
(C) Corrosive
(R) Reactive

Toxicity Characteristic Waste (E)
Acute Hazardous Waste (H)
Toxic Waste (T)

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| U148 (T) | Maleic hydrazide |
| U149 (T) | Malononitrile |
| U150 (T) | Melphalan |
| U151 (T) | Mercury |
| U152 (I,T) | Methacrylonitrile |
| U153 (I,T) | Methanethiol |
| U154 (I) | Methanol |
| U155 (T) | Methapyrilene |
| U156 (I,T) | Methyl chlorocarbonate |
| U157 (T) | 3-Methylcholanthrene |
| U158 (T) | 4,4'-Methylenebis(2-chloroaniline) |
| U159 (I,T) | Methyl ethyl ketone (MEK) |
| U160 (R,T) | Methyl ethyl ketone peroxide |
| U161 (I) | Methyl isobutyl ketone |
| U162 (I,T) | Methyl methacrylate |
| U163 (T) | MNNG |
| U164 (T) | Methylthiouracil |
| U165 (T) | Naphthalene |
| U166 (T) | 1,4-Naphthoquinone |
| U167 (T) | 1-Naphthalenamine |
| U168 (T) | 2-Naphthalenamine |
| U169 (I,T) | Nitrobenzene |
| U170 (T) | p-Nitrophenol |
| U171 (I,T) | 2-Nitropropane |
| U172 (T) | N-Nitrosodi-n-butylamine |
| U173 (T) | N-Nitrosodiethanolamine |
| U174 (T) | N-Nitrosodiethylamine |
| U176 (T) | N-Nitroso-N-ethylurea |
| U177 (T) | N-Nitroso-N-methylurea |
| U178 (T) | N-Nitroso-N-methylurethane |
| U179 (T) | N-Nitrosopiperidine |
| U180 (T) | N-Nitrosopyrrolidine |
| U181 (T) | 5-Nitro-o-toluidine |
| U182 (T) | Paraldehyde |
| U183 (T) | Pentachlorobenzene |
| U184 (T) | Pentachloroethane |

Basis for listing or class of hazardous waste:

| | |
|---|---|
| (I) Ignitable | Toxicity Characteristic Waste (E) |
| (C) Corrosive | Acute Hazardous Waste (H) |
| (R) Reactive | Toxic Waste (T) |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| U185 (T) | Pentachloronitrobenzene (PCNB) |
| U186 (I) | 1,3-Pentadiene |
| U187 (T) | Phenacetin |
| U188 (T) | Phenol |
| U189 (R) | Phosphorous sulfide |
| U190 (T) | Phthalic anhydride |
| U191 (T) | Pyridine, 2-methyl- |
| U192 (T) | Pronamide |
| U193 (T) | 1,3-Propane sultone |
| U194 (I,T) | 1-Propanamine |
| U196 (T) | Pyridine |
| U197 (T) | p-Benzoquinone |
| U200 (T) | Reserpine |
| U201 (T) | Resorcinol |
| U202 (T) | Saccharin, and salts |
| U203 (T) | Safrole |
| U204 (T) | Selenium dioxide |
| U205 (R,T) | Selenium sulfide |
| U206 (T) | Streptozotocin |
| U207 (T) | 1,2,4,5-Tetrachlorobenzene |
| U208 (T) | 1,1,1,2-Tetrachloroethane |
| U209 (T) | 1,1,2,2-Tetrachloroethane |
| U210 (T) | Tetrachloroethylene |
| U211 (T) | Carbon tetrachloride |
| U213 (I) | Tetrahydrofuran |
| U214 (T) | Thallium(I) acetate |
| U215 (T) | Thallium(I) carbonate |
| U216 (T) | Thallium(I) chloride |
| U217 (T) | Thallium(I) nitrate |
| U218 (T) | Thioacetamide |
| U219 (T) | Thiourea |
| U220 (T) | Toluene |
| U221 (T) | Toluenediamine |
| U222 (T) | o-Toluidine hydrochloride |
| U223 (R,T) | Toluene diisocyanate |
| U225 (T) | Bromoform |

Basis for listing or class of hazardous waste:

| | |
|---|---|
| (I) Ignitable | Toxicity Characteristic Waste (E) |
| (C) Corrosive | Acute Hazardous Waste (H) |
| (R) Reactive | Toxic Waste (T) |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| U226 (T) | Methyl chloroform |
| U227 (T) | 1,1,2-Trichloroethane |
| U228 (T) | Trichloroethylene |
| U234 (R,T) | 1,3,5-Trinitrobenzene |
| U235 (T) | Tris(2,3-dibromopropyl) phosphate |
| U236 (T) | Trypan blue |
| U237 (T) | Uracil mustard |
| U238 (T) | Ethyl carbamate (urethane) |
| U239 (I) | Xylene |
| U240 (T) | 2,4-D, salts and esters |
| U243 (T) | Hexachloropropene |
| U244 (T) | Thiram |
| U246 (T) | Cyanogen bromide (CN)Br |
| U247 (T) | Methoxychlor |
| U248 (T) | Warfarin, and salts, when present at concentrations of 0.3% or less. |
| U249 (T) | Zinc phosphide, $Zn_3P_2$ when present at concentrations of 10% or less. |
| U271 | Carbamic acid, {1-[(butylamino)carbonyl]-1H-benzamidazol-2-yl}-, methyl ester (Benomyl) |
| U277 | Carbamodithioic acid, diethyl-,2-chloro-2-propenyl esters (Sulfallate) |
| U278 | 1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbamate (Bendiocarb) |
| U279 | 1-Naphthalenol, methylcarbamate (Carbaryl) |
| U280 | Carbamic acid, (3-chlorophenyl)-, 4-chloro-2-butynyl ester (Barban) |
| U328 (T) | o-Toluidine |
| U353 (T) | p-Toluidine |
| U359 (T) | Ethanol, 2-ethoxy- |
| U364 | 1,3-benzodioxol-4-ol, 2,2-dimethyl-, (Bendiocarb phenol) |
| U365 | 1H-Azepine-1-carbothioic acid, hexahydro-, S-ethyl ether (Molinate) |
| U366 | 2H-1,3,5-thiadiazine-2-thione, tetrahydro-3,5-dimethyl- (Dazomet) |

Basis for listing or class of hazardous waste:

(I) Ignitable
(C) Corrosive
(R) Reactive

Toxicity Characteristic Waste (E)
Acute Hazardous Waste (H)
Toxic Waste (T)

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| U367 | 7-Benzofuranol, 2,3-dihydro-2,2-dimethyl- (Carbofuran phenol) |
| U372 | Carbamic acid, 1H-benzomidazol-2-yl, methyl ester (Carbendazim) |
| U373 | Carbamic acid, phenyl-, 1-methylethyl ether (Propham) |
| U375 | Carbamic acid, butyl-, 3-idio-2-propynyl ester (Troysan Plyphase) |
| U376 | Carbamodithioic acid, dimethyl-, tetraanhydrosulfide with orthothioselenious acid (Seleneum dimethyldithiocarbamate) |
| U377 | Carbamodithioic acid, methyl, -monopotassium salt (Potassium n-methyldithiocarbamate) |
| U378 | Carbamodithioic acid, (hydroxymethyl)methyl-, monopotassium salt (Busan 40) |
| U379 | Carbamodithioic acid, dibutyl, sodium salt (Sodium dibutyldithiocarbamate) |
| U381 | Carbamodithioic acid, diethyl-, sodium salt (Sodium diethyldithiocarbamate) |
| U382 | Carbamodithioic acid, dimethyl-, sidium salt (Dibam) |
| U383 | Carbamodithioic acid, dimethyl, porassium salt (Potassium dimethyl dithiocarbamate) (Busan 85) |
| U384 | Carbamodithioic acid, methyl-, monosodium salt (Metam Sodium) |
| U385 | Carbamodithioic acid, dipropyl-, S-propyl ester (Vemolate) |
| U386 | Carbamodithioic acid, cyclohexylethyl, S-ethyl ester (Cycloate) |
| U387 | Carbamodithioic acid, dipropyl-, S-(phenylmethyl) ester (Prosulfocarb) |
| U389 | Carbamodithioic acid, bis(1-methylethyl)-, S-(2,3,3-trichloro-2-propenyl) ester (Triallate) |
| U390 | Carbamodithioic acid, dipropyl-, S-ethyl ester (EPTC) |
| U391 | Carbamodithioic acid, butylethyl-, E-propyl ester |

| EPA Hazardous Waste Number: | Hazardous Waste/Constituent: |
|---|---|
| | (Pebulate) |
| U392 | Carbamodithioic acid, bis(2-methylpropyl)-, S-ethyl ester (Butylate) |
| U393 | Copper, tris(dimethylcarbamodithioato- S,S')-, (Copper dimethyldithiocarbamate) |
| U394 | Ethanimidothioic acid, 2-(dimethylamino)-N-hydroxy-2-oxo-, methyl ether (A2213) |
| U395 | Ethanol, 2,2'-oxybis-, dicarbamate (Reactacrease 4-DEG) |
| U396 | Iron, tris(dimethyl carbamodithioato-S,S')-(Ferbam) |
| U400 | Piperidine, 1,1'-(tetrathiodicarbonothioyl)-bis-(Sulfads) |
| U401 | Bis(dimethyl thiocarbamoyl) sulfide (Tetramethylthiuram monosulfide) |
| U402 | Thioperoxydicarbonic diamide, tetrabutyl (Butyl Tuads) |
| U403 | Thioperoxydicarbonic diamide, tetraethyl (Disulfram) |
| U404 | Ethanamine, N,N-diethyl- (Triethylamine) |
| U407 | Zinc, bis(diethylcarbamodithioato-S,S') (Ethyl Ziram) |
| U409 | Carbamic acid, [1,2-phenylenebis(iminocarbonothioyl)]bis-, dimethyl ester (Thiophanate-methyl) |
| U410 | Ethanomidothoic acid, N,N'-{thiobis[(methylimino)carbonyloxy]}bis-, dimethyl ester (Thiodicarb) |
| U411 | Phenol, 2-(1-methylethoxy)-, methylcarbamate (Propoxur) |

## Other Wastes

- Solid wastes as defined by 40 CFR 261.2
- Waste from a Hazardous Waste Facility or Site, or waste resulting from activities under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) including but not limited to personnel protective equipment, discarded containers of laboratory chemicals (lab packs), lab equipment, clothing, debris from spills or cleanup and floor sweepings.

## Table of Contents

## List of Figures



Note: Figures D.3 through D.9 are presented in Appendix D-A

## List of Tables



## List of Appendices



## List of Referenced Drawings

Drawings located in Section Y, Referenced Drawings

## Acronym Table

~~Safety-Kleen (Wichita), Inc. (SKW)~~ Clean Harbors Kansas, LLC (CHK)
Intermodal Container (IMC)
Container Management Unit (CMU)
Personal Protection Equipment (PPE)
Waste Analysis Plan (WAP)
National Fire Protection Association (NFPA)
United States Department of Transportation (USDOT)

## D Introduction:

The purpose of this section is to provide information regarding the design and operation of the various container management units at the ~~Safety-Kleen (Wichita), Inc. (SKW).~~Clean Harbors Kansas, LLC(CHK). This information is provided to fulfill the requirements of Kansas Administrative Regulations (KAR), Title 28, Article 31 as well as federal regulations as set forth in 40 CFR Part 264 Subpart I, and 40 CFR 270.15. The KAR incorporate, with few additions, the RCRA regulations contained in 40 CFR Parts 260 through 270. Therefore, this section will refer only to the federal regulations.

As used in this permit application, the term "drum" is intended to describe a specific type of container, namely a fifty-five (55) gallon drum, approximately twenty-three (23) inches in diameter and thirty-four (34) inches high. The term "bulk container" is used to describe any container with a capacity greater than 450 gallons. Roll-on/roll-off boxes, gondolas, sludge boxes and Intermodal Container (IMC)s are examples of types of bulk containers which may be managed at ~~the Safety-Kleen (Wichta), Inc.~~
Clean Harbors Kansas, LLC.

Otherwise, the term container, as used in this application, shall have the same meaning as that listed in 40 CFR 260.10.

## D-1 Summary Description:

**Referenced Drawings**

| | |
|---|---|
| Drawing 50-01-10-001 | Hazardous Waste Management Areas |
| Drawing 50-01-10-002 | Material Containment Areas |

There are seven (7) storage buildings which are subdivided into individual Container Management Unit (CMU)s at the ~~SKW~~CHK facility utilized for container storage and processing of hazardous waste; CMUs allow flexibility of management options within the various container storage buildings. Location of these storage buildings is shown on Figure D.1, Hazardous Waste Management Areas and individual CMUs are shown on Figure D.2, Material Containment Areas. Figures showing individual storage buildings are presented in Appendix D-A, Container Storage Buildings; corresponding drawings are located in Section Y, Referenced Drawings. Specific information regarding areal extent, capacity and drum equivalents is discussed in Section A (Part A Permit Application; Addendum B). Capacities of container

Figure D.1. Hazardous Waste Management Areas

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Figure D.2. Material Containment Areas

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storage buildings are summarized in Table D.1, Container Storage Building Capacities. Table D.2, CMU Containment Summary, presents containment capacities for each CMU. The total permitted capacity for storage of containers at the ~~SKW~~CHK facility is 325,490 gallons.

~~SKW~~CHK has made the assumption, for design purposes, that all containers of hazardous wastes managed at LESW contain free liquid; thus, containment as prescribed in 40 CFR 264.175 is provided for all CMUs. The design does not preclude storage of wastes that do not contain free liquids.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10) percent of the volume of the containers in the unit, whichever is greater. Containment areas have been designed to meet this requirement. Secondary containment calculations are shown in Appendix D-B, Secondary Containment Calculations.

A wide variety of containers other than drums may be stored within the waste storage buildings. Wastes with free liquids may

## Table D.1

## Container Storage Building Capacities

| Container Storage Building | Materials Managed | Permitted Storage Capacity (Gallons) | Storage Capacity (55 Gallon Drum Equivalents) |
|---|---|---|---|
| Building D | Ignitable and/or non-ignitable or combination of both | 46,640 | 848 |
| Processing Area | Liquid and solid hazardous and/or non-hazardous materials | 9,900 | 180 |
| Building C | Ignitable and non-ignitable hazardous and non-hazardous materials | 99,110 | 1,802 |
| Drum Dock | Containerized materials | 14,960 | 272 |
| Building B | Corrosives and other non-ignitable hazardous and non-hazardous materials | 55,000 | 1,000 |
| Building I | Hazardous and non-hazardous materials | 50,600 | 920 |
| Building J | Hazardous and non-hazardous materials | 49,280 | 896 |
| Total Capacity | | 325,490 | 5,918 |

Note: Total capacity (gallons) is the additive container storage capacity for all storage buildings. Note that additional storage of waste in tanks occurs in some of these areas; permitted waste tank storage capacity is not reflected in this summary.

## Table D.2

## CMU Containment Summary

| Container Management Unit (CMU) | Maximum Number of Drums Stored (55 gallon drum equivalents) | | Gallons - Containment Capacity Required for Containers (10 % Container Capacity) | Gallons - Containment Provided |
|---|---|---|---|---|
| | Drums | Gallons | | |
| D100/D200 | 784 | 43,120 | 4,312 | 13,480 |
| D300 | 64 | 3,520 | 352 | 3,606 |
| P100/P200 | 180 | 9,900 | 990 | 32,583 |
| C100 | 16 | 880 | 88 | 244 |
| C200 | 16 | 880 | 88 | 192 |
| C300 | 240 | 13,200 | 1,320 | 3,842 |
| C400 | 184 | 10,120 | 1,012 | 3,195 |
| C500 | 192 | 10,560 | 1,056 | 3,233 |
| C600 | 192 | 10,560 | 1,056 | 3,233 |
| C700 | 962 | 52,910 | 5,291 | 16,690 |
| L100 | 272 | 14,960 | 1,496 | 1,835 |
| B100 | 120 | 6,600 | 660 | 2,262 |
| B200 | 384 | 21,120 | 2,112 | 5,592 |
| B300 | 360 | 19,800 | 1,980 | 5,630 |
| B400 | 136 | 7,480 | 748 | 2,582 |
| I100 | 416 | 22,880 | 2,288 | 4,503 |
| I200 | 64 | 3,520 | 352 | 635 |
| I300 | 440 | 24,200 | 2,420 | 6,088 |

| | | | | |
|---|---|---|---|---|
| J100 | 448 | 24,640 | 2,464 | 6,787 |
| J200 | 96 | 5,280 | 528 | 987 |
| J300 | 64 | 3,520 | 352 | 502 |
| J400 | 64 | 3,520 | 352 | 502 |
| J500 | 64 | 3,520 | 352 | 502 |
| J600 | 64 | 3,520 | 352 | 502 |
| J700 | 96 | 5,280 | 528 | 754 |

Note 1: These containment volume requirements do not include requirements for tank systems. The letter shown in the CMU identification number indicates the location by building (D - Building D, P - Processing Area, C - Building C, L - Drum Dock, B - Building B, I - Building I, and J - Building J).

Note 2: The largest container in Area I100 would be a 5,000 gallon tanker. The containment provided (5,399 gallons) is sufficient to hold the volume of this container.

be stored in containers such as tote boxes, overpack containers, etc. The total volume of waste in containers is limited by the secondary containment volumes provided for each CMU and by the capacity of each storage building. The total volume of waste stored at the facility will not exceed the permitted amount (i.e., 325,490 gallons).

Containerized hazardous wastes are delivered to the facility by truck or rail car. These containers may be managed in unloading areas prior to waste storage. Railcar receipt and unloading will take up to 10 days. Similarly, loading and shipment of railcars off-site may take up to 10 days. On occasion, ~~SKW~~CHK will receive railcars, analyze the wastes, and remanifest the railcars off-site without off-loading. ~~Safety-Kleen~~Clean Harbors Kansas, ~~(Wichitqa), Inc.~~LLC may also transfer loads of containers from truck to rail under the 10-day transfer provisions (40 CFR 264.1(g)) without site receipt.

Containers may be located within other waste management units and are used to accumulate and store site generated residues such as pump strainer residues, tank bottoms, in-line process materials, incidental spills, discarded Personal Protective Equipment (PPE), etc. ~~SKW~~CHK will manage these wastes according to the standards set forth in 40 CFR Part 262. Containers of on-site generated wastes will not be accumulated for more than ninety (90) days within these areas, and will be accumulated in containers complying with 40 CFR 264 Subpart I.

Storage building CMUs have been designed to receive many categories of waste streams in drums, overpacks, gondolas, tote boxes, etc. The number of segregated containment units provides the capability to store various waste types within certain units, and meet the requirements for managing reactive, ignitable and incompatible wastes. Any of the CMUs may be used to store any container type and volume as dictated by operational needs and compatibility requirements. Specifications regarding layout of these buildings are presented later in this section; brief descriptions of each storage building are provided below.

**D-1a Building D:**

The layout of Building D is designed to accommodate storage of wastes in containers and tanks (tank management is addressed in Section E, Tank Systems).

Waste managed in this area may be processed or treated in containers as well as managed in one or more of the tanks or process units on site. Diking and berms divide this building into four (4) contained sections; three (3) of these sections are utilized for storage of hazardous waste in containers.

D-1b **The Process Area:**

The Process Area is designed to accommodate storage of wastes in containers and tanks (tank management is addressed in Section E, Tank Systems). Several process units are located there: the Drum Scraper, Drum Washing, and Dispersing Units (see Section M, Other Regulated Units). Waste managed in this area may be processed or treated in containers as well as managed in one or more of the tanks or process units on site. This building is managed as two operational areas which share common secondary containment.

D-1c **Building C:**

Building C is utilized for container storage, treatment, and management. Waste managed in this area may be processed or treated in containers. Diking divides this building into seven (7) contained areas.

D-1d **Drum Dock:**

The Drum Dock is utilized for container storage, treatment, and management. Waste managed in this area may be processed or treated in containers. Diking provides one (1) contained area in this building.

D-1e **Building B:**

Building B is utilized for container storage, treatment, and management. Waste managed in this area may be processed or treated in containers. Diking divides this building into four (4) contained areas.

D-1f **Building I:**

Building I is designated for container storage, treatment, and management. Waste managed in this area may be processed or treated in containers. Rooms and diking in this building will provide containment for three (3) separate CMUs.

D-1g Building J:

Building J is designated for container storage, treatment, and management. Waste managed in this area may be processed or treated in containers. Rooms and diking in this building will provide containment for seven (7) separate CMUs.

## D-2 Storage in Containers with Free Liquids:

### D-2a General Area Design Features:

Waste storage buildings were constructed for industrial use and are generally of metal or cinder block fabrication. Buildings perform a variety of functions including control of access, ambient temperature, precipitation ingress, and wind effects such as dust generation.

The storage buildings are covered to minimize ingress of precipitation. The individual CMUs are constructed on concrete pads with perimeter curbs (diking) to contain potential spills, to prevent run-off, and to prevent run-on. Containment capacity is adequate to contain incidental precipitation (i.e., precipitation blown in).

Secondary containment consists of concrete diking/walls or block construction on concrete pads. Concrete pads and diking/walls that make up the secondary containment are maintained to prevent or repair cracks and gaps. All joints contain a continuous water stop or are otherwise sealed to prevent migration of liquids.

Diking separates containment areas of individual CMUs. Waste containers are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers from contact with accumulated liquids. Concrete surfaces of the secondary containment systems are sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed.

Rooms have open areas which provide maneuvering room for mobile equipment such as forklifts, and, if needed, for staging and/or stacking of drums during pre-acceptance and processing.

**D-2b Unloading Areas:**

Containerized hazardous wastes are unloaded onto loading docks, loading areas, or directly into areas provided with secondary containment. Containers are placed into CMUs upon completion of unloading procedures or within 72 hours, whichever comes first. Appendix C-A provides a more detailed discussion of these procedures.

Prior to placement in permitted storage, waste in containers will be managed in unloading areas and/or staged in an appropriate CMU. Containers arriving on-site by truck may be unloaded at any of the seven (7) storage buildings; rail spur shipments may be unloaded directly into Building C, Building D, Process Area, Building I, or Building J, or transferred to other buildings as needed. See Figure D.1, Hazardous Waste Management Areas, for location of unloading areas.

Two (2) buildings are equipped with truck loading docks. These docks are located on the south and west sides of Building J and to the west of the Drum Dock container storage area. Truck bays are located in Building I (I100) and the Process Area (P100). Containers are moved in and out of the various buildings utilizing ramps installed to facilitate movement of equipment and materials over containment dikes.

D-2c Building D:

**Referenced Drawings**

Drawing 50-16-10-001 Building D

Building D is designed to manage hazardous waste in tanks and containers in several CMUs (tank storage in this area is addressed in Section E, Tank Systems). Containerized wastes managed in this building include both ignitable and non-ignitable materials and combinations. These materials are destined either for on-site management, recycling as waste fuel, waste water management, solvent recovery, or transport off-site for additional management. Processing of containerized wastes in Building D may involve treatment in containers or management in any of the several on-site processing units. Some portable units (e.g., filters, etc.) may be present or used in this area.

The principal processes which occur in Building D are decanting of liquids, treatment in containers, repackaging, bulking, phase separation, consolidation of solid residues, and loading and unloading of hazardous waste in containers.

D-2c(1) Secondary Containment:

Building D is divided into four operational areas: D100, D200, D300, and D400. Areas D100 and D200 share common secondary containment for containers. Areas D300 and D400 are independent, separated by diking or berms from each other and from D100/D200. These areas are shown on Figure D.2, Material Containment Areas, and Figure D.3, Building D, presented in Appendix D-A (Drawing 50-16-10-001 in Section Y). The secondary containment areas are constructed of concrete floors and concrete or cinder block diking which are free of cracks and gaps. Additionally, the floor and diking of area D400 has been lined with a chemically resistant coating to comply with the requirements of 40 CFR 264.193. The CMUs are designed to meet the storage requirements for RCRA regulated wastes, to promote sound container management practices, and to minimize the potential for a release of hazardous waste into the environment.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10) percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Detailed calculations supporting the secondary containment and storage volumes in Building D may be found in Attachment 1 of Appendix D-B.

### D-2c(2) Building Design:

Building D consists of several rooms and its overall size is approximately one-hundred-fifty-four (154) feet long by one-hundred-ten (110) feet wide. Waste containers are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers from contact with accumulated liquids. Some management of containers may occur directly on the concrete floor (e.g., during processing). Concrete curbs or walls around the unit or portable containment units provide secondary containment. Adequate secondary containment volume is provided for this building as described in D-2c(1).

## D-2d Processing Area:

**Referenced Drawings**

Drawing 50-55-10-001 Processing Area

The Processing Area is designed to manage hazardous wastes in tanks and containers in two operational areas with shared secondary containment (storage in tanks is addressed in Section E, Tank Systems). Containerized wastes managed in this area include liquids which will be pumped to bulk storage and solids which will be handled in the Drum Processing Area. These materials are destined for on-site management, recycling as waste fuel, waste water management, solvent recovery, or transport off-site for additional management. Processing of containerized wastes in this area may involve treatment in containers or management in any of the several on-site processing units. Processing units (discussed in Section M, Other Regulated Units) permanently located in the Processing Area include: 1) the Drum Scraper Unit, 2) the Drum Washing Unit, and 3) the Dispersing Unit. Some portable units (e.g., filters, pumps, etc.) may be present or used in this area.

The principal processes which occur in the Processing Area are decanting of liquids, treatment in containers, other physical treatment (including dispersing and scraping), repackaging, bulking, consolidation of solid residues, and loading and unloading of hazardous waste in containers.

Waste management in the container process line is briefly summarized below. Free liquids may first be decanted from containers. Decanting from containers may be performed on a conveyor or elsewhere in a CMU, using decanting wands, diaphragm pumps, or another suitable method. Containers may also proceed directly to the Dispersing Unit. When appropriate, containers which are found to contain solids or non-flowable sludges may bypass the Dispersing Unit and be returned to storage for alternate management, or for eventual shipment off-site, or loaded immediately for shipment off-site. Materials removed from containers are transferred to processing units, tankers, other containers, or tanks for blending, treatment, off-site shipment, or storage. Storage tanks are provided for low BTU liquids, chlorinated and nonchlorinated solvents, waste fuels, aqueous/solvent mixtures, and recovered solvents. The operation of the tank systems and the design of the Dispersing Unit are described in detail in Section E, Tank Systems, and in Section M, Other Regulated Units, respectively. If, after decanting, a container is determined to be "RCRA empty" as per 40 CFR 261.7, it may be sent for recycling, for reuse, or for off-site disposal; containers may be crushed on-site prior to shipment for disposal. If a container holds RCRA regulated material that cannot be practicably removed, the container is further managed as RCRA waste. Materials removed from containers may be processed in the Dispersing Unit or in another appropriate unit. Waste solvent or fuel may be added to the wastes in the Dispersing Unit to enhance processing (e.g., breaking up lumps and rendering the waste pumpable). Pumpable wastes are then transferred to a storage tank or directly transported off-site for further management. After emptying, the container and any remaining residues will be managed as described above.

**D-2d(1)** **Secondary Containment:**

The Processing Area is divided into two (2) operational areas, P100 and P200. These two areas are managed as a shared secondary containment system. These areas are shown on Figure D.4, Processing Area, presented in Appendix D-A (Drawing 50-55-10-001 in Section Y). The CMUs are designed to meet the storage requirements for RCRA regulated wastes, to promote sound container management practices, and to minimize the potential for a release of hazardous waste into the environment. The CMUs are constructed of concrete floors and diking which are free of cracks and gaps. Additionally, the entire area has been lined with a chemically resistant coating to comply with the requirements of 40 CFR 264.193.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10) percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Detailed calculations supporting the secondary containment and storage volumes in the Processing Area may be found in Attachment 2 of Appendix D-B.

**D-2d(2) Building Design:**

The Processing Area consists of one CMU shared by two operational areas, and its overall size is approximately eight-three (83) feet long by seventy-one (71) feet wide. Waste containers managed in the Processing Area are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers from contact with accumulated liquids. Some management of containers may occur directly on the concrete floor (e.g., during processing). Concrete curbs or walls around the unit or portable containment units provide secondary containment. Adequate secondary containment volume is provided for this building, as described in D-2d(1).

D-2e Building C:

**Referenced Drawings**

| | |
|---|---|
| Drawing 50-15-10-001 | Building C |

Building C is designed to manage containerized wastes in seven (7) CMUs. Containerized wastes managed in Building C include ignitable and non-ignitable hazardous and non-hazardous wastes. These materials are destined for on-site management, recycling as waste fuel, waste water management, solvent recovery, or transport off-site for additional management. Processing of containerized wastes in Building C may involve treatment in containers or management in any of the several on-site processing units.

The principal processes which occur in Building C are storage, treatment in containers, repackaging, bulking, consolidation of solid residues, and loading and unloading of hazardous waste in containers.

## D-2e(1) Secondary Containment:

Building C is divided into seven (7) areas (CMUs) of secondary containment by diking. These areas are shown on Figure D.5, Building C presented in Appendix D-A (Drawing 50-15-10-001 in Section Y). The CMUs are designed to meet the storage requirements for RCRA regulated wastes, to promote sound container management practices, and to minimize the potential for a release of hazardous waste into the environment. The CMUs are constructed of concrete floors and diking which are free of cracks and gaps.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10) percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Detailed calculations supporting the secondary containment and storage volumes in Building C may be found in Attachment 3 of Appendix D-B.

D-2e(2) **Building Design:**

Building C consists of seven (7) CMUs, and its overall size is approximately three-hundred-thirty-eight (338) feet long by forty (40) feet wide. Waste containers managed in Building C are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers from contact with accumulated liquids. Some management of containers may occur directly on the concrete floor (e.g., during processing). Concrete curbs or walls around the unit or portable containment units provide secondary containment. Adequate secondary containment volume is provided for this building, as described in D-2e(1).

D-2f Drum Dock:

**Referenced Drawings**

Drawing 50-15-10-002 Drum Dock

The Drum Dock is designed to manage containerized wastes in one (1) contained area (CMU). Containerized wastes managed in this area include hazardous and non-hazardous materials. These materials are destined for on-site management, recycling as waste fuel, waste water management, solvent recovery, or transport off-site for additional management. Processing of containerized wastes in this area may involve treatment in containers or management in any of the several on-site processing units.

The principal processes which occur in the Drum Dock are storage, treatment in containers, repackaging, bulking, consolidation of solid residues, sampling, and loading and unloading of hazardous waste in containers.

D-2f(1) Secondary Containment:

The Drum Dock is made up of one area (CMU); this area is diked to provide secondary containment. The area is shown on Figure D.6, Drum Dock presented in Appendix D-A (see Drawing 50-15-10-002). This CMU is designed to meet the storage requirements for RCRA regulated wastes, to promote sound container management practices, and to minimize the potential for a release of hazardous waste into the environment. The CMU is constructed of a concrete floor and diking which are free of cracks and gaps. Additionally, the CMU has been lined with a chemically resistant coating for added protection.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10) percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Secondary containment calculations for the Drum Dock are presented in Attachment 4 of Appendix D-B.

D-2f(2) **Building Design:**

The Drum Dock consists of one (1) area (CMU), and its overall size is approximately ninety-four (94) feet long by twenty-seven (27) feet wide. Waste containers managed in the Drum Dock are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers from contact with accumulated liquids. Some management of containers may occur directly on the concrete floor (e.g., during processing). Concrete curbs or walls around the unit or portable containment units provide secondary containment. Adequate secondary containment volume is provided for this building, as described in D-2f(1).

D-2g Building B:

**Referenced Drawings**

Drawing 50-14-10-001 Building B

Building B is designed to manage containerized wastes in four (4) contained areas (CMUs). Containerized hazardous wastes managed in these areas include corrosives and other non-ignitable materials. These wastes are destined for on-site management, recycling as waste fuel, waste water management, solvent recovery, or transport off-site for additional management. Processing of containerized wastes in this area may involve treatment in containers or management in any of the several on-site processing units.

The principal processes which occur in Building B are storage, treatment in containers, repackaging, bulking, consolidation of solid residues, sampling, and loading and unloading of hazardous waste in containers.

D-2g(1) **Secondary Containment:**

Building B is made up of four (4) areas (CMUs); these areas are diked to provide secondary containment. The areas are shown on Figure D.7, Building B presented in Appendix D-A (Drawing 50-14-10-001 in Section Y). The CMUs are constructed of concrete floors, and concrete or cinder block diking which are free of cracks and gaps. The CMUs are designed to meet the storage requirements for RCRA regulated wastes, to promote sound container management practices, and to minimize the potential for a release of hazardous waste into the environment.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10) percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Containment calculations supporting the secondary containment and storage volumes in Building B are presented in Attachment 5 of Appendix D-B.

D-2g(2) **Building Design:**

Building B consists of four (4) areas (CMUs), and its overall size is approximately one-hundred-eighty-eight (188) feet long by forty-nine (49) feet wide. Containerized wastes in Building B will be stored on pallets or otherwise managed to protect containers from contact with potential accumulated liquids. Some management of containers may occur directly on the concrete floor (e.g., during processing). Concrete curbs or walls around the unit or portable containment units provide secondary containment. Adequate secondary containment volume is provided for this building, as described in D-2g(1).

D-2h Building I:

**Referenced Drawings**

Drawing 50-17-10-001 Building I

Building I is an existing Interim Status waste management area that has undergone renovation. This section has been written to recognize the configuration and usage of Building I as it will be operated now that the renovations are completed.

Building I has been designed to manage containerized wastes in three (3) contained areas (CMUs). Containerized wastes managed in this building include ignitable, non-ignitable, reactive, non-reactive and other hazardous and non-hazardous wastes. These materials are destined primarily for off-site management, but may also be destined for on-site management, recycling as waste fuel, waste water management, or solvent recovery. Processing of containerized wastes in Building I may involve treatment in containers, repackaging or management in any of the several on-site processing units.

The principal processes which occur in Building I are storage, treatment in containers, repackaging, bulking, consolidation, and loading and unloading of hazardous waste in containers.

D-2h(1) **Secondary Containment:**

Building I is designed with three (3) CMUs (I100 through I300) which are diked or walled to provide secondary containment. The layout of Building I is shown on Figure D.8, presented in Appendix D-A. The CMUs are designed to meet the storage requirements for RCRA regulated wastes, to promote sound container management practices, and to minimize the potential for a release of hazardous waste into the environment. The CMUs are constructed of concrete floors and diking, and concrete block walls. Seams in the floor are sealed using water stops.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10)

percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Detailed calculations supporting the secondary containment and storage volumes in Building I may be found in Attachment 6 of Appendix D-B.

D-2h(2) **Building Design:**

Building I has been subdivided into three (3) CMUs. The building has an overall size of approximately one-hundred-six (106) feet long by forty-eight (48) feet wide. Waste containers managed in Building I are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers from contact with accumulated liquids. Some management of containers may occur directly on the concrete floor (e.g., during processing). Concrete curbs or walls around the unit or portable containment units provide secondary containment. Adequate secondary containment volume is provided for this building, as described in D-2h(1).

D-2i Building J:

**Referenced Drawings**

Drawing 50-18-10-001 Building J

Building J is an existing Interim Status waste management area that is currently undergoing renovation. This section has been written to recognize the configuration and usage of Building J as it will be operated when the renovations are completed.

Building J has been designed to manage containerized wastes in seven (7) CMUs. Containerized wastes managed in this building include ignitable, non-ignitable, reactive, non-reactive, and other hazardous and non-hazardous wastes. These materials are destined primarily for off-site management, but may also be destined for on-site management, recycling as waste fuel, waste water management, or solvent recovery. Processing of containerized wastes in Building J may involve treatment in containers, repackaging, or management in any of the several on-site processing units.

The principal processes which occur in Building J are storage, treatment in containers, repackaging, bulking, consolidation, and loading and unloading of hazardous waste in containers.

D-2i(1) Secondary Containment:

Building J is designed with seven (7) CMUs, (J100 through J700), which are all diked or walled to provide secondary containment. The layout of Building J is shown on Figure D.9 (Drawing 50-18-10-001) in Appendix D-A. The CMUs are designed to meet the storage requirements for RCRA regulated wastes, to promote sound container management practices, and to minimize the potential for a release of hazardous waste into the environment. The CMUs are (will be) constructed of concrete floors and diking, and concrete block walls. Seams in the floor are (will be) sealed using water stops.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10)

percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Detailed calculations supporting the secondary containment and storage volumes in Building J may be found in Attachment 7 of Appendix D-B.

D-2i(2) Building Design:

Building J has been subdivided into seven (7) CMUs. The building has an overall size of approximately one-hundred-sixty-two (162) feet long by forty (40) feet wide. Waste containers managed in Building J are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers from contact with accumulated liquids. Some management of containers may occur directly on the concrete floor (e.g., during processing). Concrete curbs or walls around the unit or portable containment units provide secondary containment. Adequate secondary containment volume is provided for this building, as described in D-2i(1).

D-2j **Bulk Container Storage:**

Bulk containers such as IMCs, gondola boxes, roll-on/roll-offs, and sludge boxes may be delivered by truck directly to the facility or by rail to the site or to a nearby siding. Containerized hazardous wastes are unloaded onto loading docks, loading areas, or directly into areas provided with secondary containment. Depending upon the volume of shipments arriving at the facility, the bulk containers may either be sampled upon arrival, or placed in a loading area or in one of the container storage areas prior to completion of the incoming load procedures. Bulk containers of wastes will be placed in a CMU within 72 hours of arrival at the site, with the exception of railcars. IMCs and other bulk rail containers holding wastes will be off-loaded within 10 days of arrival at the site.

Transport vehicles hauling wastes (e.g., end dump trucks, van trailers, and tankers, with or without tractors) may be stored in the truck bay portion of the Processing Area or adjacent to Building I and/or Building J. After sampling and incoming load procedures are complete, the bulk containers may remain in storage, be managed on-site, or be shipped off-site for alternate management.

The truck bay is of sufficient width to allow adequate aisle spacing to be maintained along the side of the building and containment structure. Aisle spacing of approximately two (2) feet or more will be maintained between double rows or pallets of containers. This spacing will allow inspection along the sides of the containers for leaks and proper labeling. The maximum sized RCRA container managed in a CMU is limited to the CMU containment volume; adequate containment is provided in the truck bay for management of any size container or bulk transport vehicles in this CMU. Containment capacity for the truck bay is addressed in section D-2d(1), which discusses the Processing Area, of which the truck bay is a part.

Area I100 in Building I is designed to store up to two bulk containers (e.g., tanker, gondola, etc.) or van trailers. Adequate containment is provided in Area I100 for storage of up to two bulk containers plus additional containers, maintaining aisle space of at least two feet. At no time will the maximum storage exceed the permitted capacity identified in Table D-2.

Secondary containment capacity is discussed in Attachment D.8 and Section D-2h.

## D-3 General Container Management Practices:

### D-3a Description of Containers:

The CMUs are capable of receiving and processing containers, both new and used, of various materials of construction, sizes, and capacities. The volume of individual containers managed in the CMUs is typically 450 gallons or less, except in the truck bay area, Building C, Building D, Building I, and in the Process Area where, after processing, wastes may be placed into bulk containers which may have volumes up to fifty-four (54) cubic yards. A wide variety of other containers, such as paint cans, Marino bags, wooden cases, plastic tote tanks, and glass bottles may also be received.

Bulk containers managed on-site include, but are not limited to, IMCs, sludge boxes, gondolas, tankers, end dumps, and railcars. Some storage areas have secondary containment and design capabilities for bulk containers. Bulk containers may be used for virtually any of the waste types handled at the facility. LESW will not place wastes into an unwashed container that has previously held incompatible wastes.

D-3b <u>Handling of Containers:</u> 40 CFR 264.173.

The majority of containers managed at the ~~SKW~~CHK facility are expected to be drums or similar containers delivered in van trailers. An industrial truck equipped with drum handling forks or a single container hand trolley will generally be employed to unload non-palletized shipments. Palletized containers will generally be unloaded with an industrial truck equipped with forks. Other container movement equipment may be used as available and appropriate. Ramps will be used as necessary during transfer operations to facilitate movement of materials in and out of CMUs.

Containers may be moved within the facility by hand, by industrial truck, truck, railcar, or by other safe and appropriate means (e.g., conveyor). The specific method employed will be dependent on the distance, and the quantities and sizes of containers to be moved.

When moving containers between storage areas, loading areas, and/or process areas, the facility may need to temporarily stage containers prior to transfer to the next unit. This staging will generally occur in the unloading areas or in the area between Building C and the Processing Area. All staging will occur in paved areas. This staging of containers will not exceed one shift or eight hours.

Equipment is available to facilitate such operations as the transfer of wastes from a damaged container to a container in good condition, the manual repackaging of containers, the transfer of leaking containers into overpacks, and the removal of individual containers from CMUs.

During the unloading procedure, the containers will be visually checked. Those containers selected for sampling and analysis will be opened and sampled as described in Section C, Waste Characterization, Appendix C-A, Waste Analysis Plan (WAP). Sampling may occur on the unloading platform, in the working area, in a CMU or, prior to unloading, on the transport vehicle. Once samples have been obtained, the containers will be re-closed and will remain staged or be placed in a CMU until incoming load procedures are completed in accordance with the WAP. Containers which are not already in a containment unit will be moved into a CMU after the incoming load procedures are completed and the waste stream is accepted. If incoming load procedures cannot be completed in 72 hours, containers will be placed in an appropriate CMU, based on manifest, pre-acceptance, and other information available about the waste. If subsequent analytical or other information identifies a compatibility problem, the container will be moved to an appropriate CMU, rejected and returned to the generator, or transferred to another facility capable of handling the material.

Containers will be opened by one of a variety of methods. Liquid storage containers equipped with screw-in bungs in the lids will generally be sampled by removing the bung, withdrawing a sample and replacing the bung. Containers with fully removable tops (i.e., with retaining rings) will generally be opened by removing the lid and ring, sampling and replacing the lid and ring.

Containers are normally kept closed during storage. However, they may be opened for:

- inspection,
- sampling,
- treatment within the containers, and/or
- removal/addition of material.

Regularly scheduled inspections of the CMUs, loading/unloading areas, and processing areas are conducted to facilitate detection of open or deteriorating containers, improper storage in the CMUs, liquids on the floors or in sumps, or other improper conditions as outlined in Section F, Inspection Plan. The frequencies of these inspections are defined in the Inspection Plan.

Hazardous and non-hazardous wastes may be stored within the same CMU, but they will not be stored on the same pallet, except insofar as they have been received on the same pallet (e.g., lab packs, wrapped pallets, etc.). The Waste Tracking System will provide a record of the location of all wastes at the facility. This report will be available for facility personnel and inspectors to identify the location of both hazardous and non-hazardous wastes at the facility.

For purposes of meeting the requirements of 40 CFR 268.50, containers are dated during the incoming load or off-loading procedures.

As the newly proposed second phase of the air emission standards for hazardous waste facilities becomes final, ~~SKW~~CHK will address and implement air emission control devices for the affected container management activities as applicable.

### D-3b(1) Containers - 55 Gallon or Larger:

At times, 55 gallon or larger containers may be stacked two (2) high (double-stacked), providing that the wastes are compatible and that such stacking is consistent with the National Fire Protection Association (NFPA) code for flammable storage.

Inspection aisles of two (2) feet or more in width will be maintained between adjacent double rows of 55-gallon or larger containers in CMUs.

The bottom layer of containers in storage are placed on pallets or skids, or are otherwise managed to prevent contact of containers with any accumulated liquids. Rows will be no more than two (2) 55-gallon or larger containers wide. Dividers such as wooden pallets or plywood sheeting may be placed on top of the bottom row(s) of drums. A second layer of containers may be placed on top of the bottom row.

### D-3b(2) Containers - Smaller Than 55 Gallon:

Smaller containers, particularly those small volume containers such as pint, quart, gallon, and five (5) gallon sizes, may be stored in stacks more than two (2) high, and will frequently be received that way. Any stacking of containers not specifically regulated by the NFPA code will be performed with safety of personnel uppermost in mind. Stacking of containers of less than fifty-five (55) gallon capacity will be restricted to a height not to exceed six (6) feet to facilitate inspection. This does not preclude, as an accepted management practice, the placing of large numbers of small containers within drums or larger overpack containers, and the double stacking of these larger containers, nor the storage of individual containers which may exceed a height of six (6) feet, nor the stacking of palletized small containers. The total volume of containers of wastes with free liquids will not be allowed to exceed that allowed by the secondary containment capacity.

Where applicable, inspection aisles of two (2) feet or more in width will be maintained in CMUs between adjacent rows of pallets of containers that hold less than 55 gallons.

The Waste Tracking System will provide a record of the location of each container of waste received at the facility, including those containers that are arranged or stacked in such a way that not all labels may be visible from the aisle. The Waste Tracking System will be updated at least once each day that containers of waste are moved.

**D-3c Waste and Container Compatibility: 40 CFR 264.172**

Wastes accepted for storage, treatment, or other management are required to be compatible with the containers used to store them. Acceptable containers for acidic wastes may include those made of plastic, steel lined with plastic, or fiberglass. Acceptable containers for other wastes include, but are not limited to, steel, fiberglass, plastic, steel lined with plastic, and fiber drums and boxes, wooden cases, and fiber sacks. Solvent wastes are frequently stored in steel drums bearing DOT identification of 17 E or H. Alkaline wastes may be stored in plastic containers or containers manufactured from carbon steel. Fiber sacks may be used to store, among other materials, contaminated debris or soils. New types of containers are routinely being developed and approved by the United States Department of Transportation (USDOT); USDOT and Performance Oriented Packaging Standards will dictate the shipment in, and use of, alternate containers meeting regulated performance requirements. ~~SKW~~CHK may receive waste in any appropriate USDOT approved or performance specified container for management at the facility. Site-generated waste may be accumulated in specially designed containers specific to the plant process equipment.

D-3d Condition of Containers: 40 CFR 264.171

Facility personnel will inspect all containers for evidence of leakage, deterioration, or severe corrosion as part of the incoming load and unloading procedures at ~~Safety-Kleen (Wichita), Inc.~~ Clean Harbors Kansas, LLC. Containers are also routinely inspected while in storage. Inspection schedules are discussed in Section F, Inspection Plan. Containers exhibiting evidence of leakage, deterioration which would affect the structural integrity of the container, or severe corrosion will be transferred into overpacks, or containers in good condition, or the wastes may be transferred directly into tanks or treatment units. Open containers, improper storage in CMUs, and evidence of spills and leaks are among the focal points of inspections. Transporters of Hazardous Waste are required to meet the specifications in the USDOT regulations in 49 CFR Part 178 Subparts A through J, 49 CFR 173 Subparts J through O, and the requirements of 49 CFR 172.101 with respect to design and use of containers. Changes in these and other regulations brought about by USDOT's Performance Oriented Packaging Standards will be observed, by ~~SKW~~CHK or generators sending shipments of waste to ~~SKW,~~ CHK, as they are made effective.

Any containers found to be inadequately or improperly identified or deficient in the required information may be staged in a holding area until the deficiency can be resolved.

**D-3e** **Response to Leaks:** **40 CFR 264.171**

Because the secondary containment system is designed to prevent storm water run-on, liquids found on the floor of a CMU will be either blown precipitation or leaks of stored materials. When an inspection reveals liquid within a contained area, the source will be identified if possible. If liquids are discovered, they will be removed within twenty-four (24) hours of detection, or as soon as practical. The identification of the origin of the liquid may be accomplished in a number of ways, using a variety of inspection techniques. Visual inspection of the condition of containers for localized staining or leakage adjacent to a particular container is the technique most likely to be employed to trace the source of a leak. If this measure fails, a sample of the liquid in the containment area will be analyzed for a range of parameters based upon the possible contents of the containers in the affected CMU. This process should indicate the waste stream type from which the leaking waste may have originated. All containers holding that waste stream type within the CMU will then be checked for leaks until the leak is found.

Wastes from the leaking container will be managed as described in D-3d. Liquid in the containment area may be transferred to an appropriate container, or to one or more storage tank(s), using a portable pump. Other suitable methods using absorbents, vacuum systems, etc., may also be used to manage spills. Any container into which wastes are transferred will be appropriately identified as to the type of waste stored in it. Minor quantities of liquids may be absorbed, collected, and placed in an appropriately identified container.

### D-3f Special Requirements for Ignitable and Reactive Wastes: 40 CFR 264.176.

Ignitable and reactive wastes will be segregated from incompatible materials within CMUs. Segregation may involve placement in separate CMUs, or use of portable secondary containment units. Containers of ignitable or reactive wastes are stored at least fifty (50) feet from the facility property boundary. CMUs that may contain ignitable or reactive wastes include C100, C200, C400, C500, C600, C700, L100, P100, P200, D100, D200, D300, D400, I200, I300, I400, J100, J200, J300, J400, J500, J600, J700, and all but the west twenty-five (25) feet of I100. Because of the requirements of 40 CFR 264.176, ignitable or reactive wastes will not be stored in CMUs C300, B100, B200, B300, B400, and the west twenty-five (25) feet of I100. Measures to prevent accidental ignition of ignitable wastes include the prohibition of smoking, use of non-sparking tools, and enforcement of procedures to control burning and welding in areas where these wastes are stored. Section F, Inspection Plan, addresses these procedures in detail.

### D-3g Special Requirements for Incompatible Wastes: 40 CFR 264.177.

During unloading procedures, the containers will be visually checked. Those containers selected for sampling and analysis will be opened and sampled as described in the WAP (see Section C, Waste Characterization). Sampling may occur on the unloading platform, in the working area, in a CMU, or prior to unloading, on the transport vehicle. Once samples have been obtained, the containers will be re-closed and will remain staged in accordance with the WAP until the incoming load procedures are completed. If incoming load procedures are not completed within 72 hours, the containers will be transferred into an appropriate CMU, as determined using available information (e.g., manifest, Waste Profile Sheet, etc.).

Containers which are not already in a CMU will be moved into a CMU after the incoming load procedures are completed or within 72 hours. Should a container of waste be determined to be incompatible with the other wastes stored in a CMU as a result of analysis, it will be segregated from incompatible wastes. Portable containment units may be used to facilitate segregation.

Each RCRA CMU is equipped with secondary containment. These containment systems have sufficient capacity to contain a minimum of ten (10) percent of the volume of the maximum container capacity of wastes with free liquids permitted for storage in that unit. Wastes which are incompatible may be stored in adjacent CMUs separated by either diking, building walls, or other device.

The seven (7) container storage buildings are subdivided into individually contained CMUs. Adjacent CMUs may be used to manage incompatible wastes. The CMUs are used interchangeably. The criteria for CMU selection for storage of a specific waste type is based upon considerations of chemical compatibility, storage unit capacity, and operational demands.

To ensure that residues from wastes previously stored in a CMU do not contact potentially incompatible wastes about to be placed in the CMU, the following procedure will be observed. The CMU will be visually inspected when containers are removed for compatibility service change, and will be cleaned if evidence of a spill is found prior to placement of the next waste into the CMU for storage.

~~SKW~~CHK may transfer wastes from one container to another. In accordance with 40 CFR 264.177(b), hazardous waste will not be placed in an unwashed container that previously held an incompatible waste or material, except when that placement constitutes known and planned treatment as discussed in Section D-5, Treatment in Containers.

## D-3h Transhipment of Containers of Waste:

The majority of wastes received at the ~~SKW~~CHK facility will be stored, processed, and shipped off-site. However, some wastes, primarily waste in drums, which are intended for treatment or direct disposal at off-site facilities, may be temporarily stored at ~~SKW.~~CHK.

The facility may occasionally serve as a 10-day transfer station for wastes destined for incineration, disposal, or other management at another facility. This 10-day transfer will comply with the requirements of 40 CFR 263.12 and 264.1(g)(9). 10-day transfer stations are not subject to the permit requirements of 40 CFR 270 (see 40 CFR 270.1(c)(2)(vi)).

10-day transfer wastes may remain at the site for a period not to exceed ten (10) days prior to continuing the journey to the designated treatment, storage, or disposal site. 10-day transfer loads remain "in transit" during the entire stay at the site. These wastes may be off-loaded and transferred to another vehicle or to a railcar. Because these 10-day transfer loads are never accepted into the ~~SKW~~CHK waste management system, no analyses are performed on the loads. They will, however, be identified in the Waste Tracking System.

D-4 <u>Storage in Containers without Free Liquid:</u> 40 CFR 264.175(c), 270.15(b).

~~SKW~~CHK has made the assumption, for design purposes, that all containers of wastes managed at the ~~SKW~~CHK facility contain free liquid. Waste without free liquid is managed as appropriate for the waste code(s) carried. Management of containerized wastes without free liquids does not require containment (40 CFR 264.175(b)(3)); however, containers containing no free liquids may be managed in any container storage area on-site. Future operations may include storage areas without containment for exclusive storage of containers (including bulk containers) without free liquids.

D-5 <u>Treatment in Containers</u>

~~SKW~~CHK may perform controlled treatment in containers (e.g., neutralization, phase separation, blending, phase change, etc.) in any of the permitted CMUs at the facility. Containers will remain open only for as long as is necessary to ensure complete and safe treatment. In general, treatment in containers will involve the container being open for between one and four hours, although treatment in bulk containers may take as much as 24 hours.

Treatment in containers will involve the following steps:

- open the container;
- add materials or other wastes to serve as treatment reagents;
- mix the material in the container, as necessary;
- allow sufficient time for the reaction to be complete, and for any cooling, hardening, or other effects to occur as desired;
- observe the contents of the container and sample and analyze the treated mixture, as appropriate;
- if treatment is determined to be incomplete, repeat the four previous steps;
- when treatment is complete, close the container or transfer the contents to another container or tank.

Treatment in containers is performed to enable safer or more efficient handling of a waste or to prepare a waste for subsequent processing. Treatment in containers may result in elimination of hazardous characteristics. In the event that this results in removal of a waste code from a waste, ~~SKW~~CHK will use a Kansas certified laboratory to perform the analytical procedures.

# Appendix D-A

# Container Storage Buildings

July 21, 1994
Revision No. 7

# Appendix D-A

# Container Storage Buildings

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~~Safety-Kleen (Wichita), Inc.~~ Clean Harbors Kansas, LLC (CHK)

## E-1 Introduction:

The purpose of this section is to provide information regarding the design, installation, and operation of the various tank systems at the ~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC facility. This information is provided to fulfill the requirements of Kansas Administrative Regulations (KAR), Title 28, Article 31 as well as federal regulations as set forth in 40 CFR Part 264 Subpart J, and 40 CFR 270.16. The KAR incorporate, with few additions, the RCRA regulations contained in 40 CFR 260 through 270. Therefore, this section will refer only to the federal regulations.

A variety of tank systems are used at the ~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC facility. Tanks are used to store and/or treat liquids, solids, and sludges. There are twenty-two (22) waste storage tanks with a total permitted capacity of 137,987 gallons at the facility. Individual tank capacities, dimensions, and tank system locations are summarized on Table E.1, Hazardous Waste Storage Tanks. Each of these tank systems is addressed in detail in the following pages.

| Table E.1<br>Hazardous Waste Storage Tanks | | | | |
|---|---|---|---|---|
| VESSEL | CAPACITY - WORK (gal) | CAPACITY - MAX (gal) | DIMENSIONS* | LOCATION |
| V-1 | 7,181 | 7,363 | 8'0"x 26'7"V | Process Area |
| V-2 | 7,084 | 7,084 | 8'0"x 18'10"V | Process Area |
| V-3 | 7,181 | 7,363 | 8'0"x 26'7"V | Process Area |
| V-4 | 7,181 | 7,363 | 8'0"x 26'7"V | Process Area |
| V-5 | 20,895 | 20,895 | 12'0"x 25'7"V | Process Area |
| V-6 | 20,895 | 20,895 | 12'0"x 25'7"V | Process Area |
| V-7 | 7,181 | 7,363 | 8'0"x 26'7"V | Process Area |
| V-8 | 7,181 | 7,363 | 8'0"x 26'7"V | Process Area |
| V-9 | 5,078 | 5,078 | 6'0"x 24'0"H | Building D |
| V-10 | 5,078 | 5,078 | 6'0"x 24'0"H | Building D |
| V-11 | 5,078 | 5,078 | 6'0"x 24'0"H | Building D |
| V-12 | 5,078 | 5,078 | 6'0"x 24'0"H | Building D |
| V-13 | 5,078 | 5,078 | 6'0"x 24'0"H | Building D |
| V-14 | 5,078 | 5,078 | 6'0"x 24'0"H | Building D |
| V-15A | 2,659 | 2,659 | 6'3"x 11'7"H | Building D |
| V-15B | 2,659 | 2,659 | 6'3"x 11'7"H | Building D |
| V-15C | 2,659 | 2,659 | 6'3"x 11'7"H | Building D |
| V-15D | 2,659 | 2,659 | 6'3"x 11'7"H | Building D |
| V-16 | 9,028 | 9,028 | 8'0"x 24'0"H | Building D |
| V-17 | 522 | 522 | 3'4"x 8'0"H | Process Area |
| V-26 | 1,129 | 1,155 | 6'0"x 5'7"V | Process Area |
| TOTAL | 136,562 | 137,498 | N/A | N/A |

*Dimensions are given in feet and inches. The first dimension is the tank diameter and the second dimension is the length, followed by a 'V' for vertical tanks or an 'H' for horizontal tanks.

E-2 **Description of Tank Systems:** 40 CFR 270.16(a),(b),and(e), 264.192 (a)

The purpose of the following discussion is to describe the design and operation of the various tank systems at ~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC. Certified tank assessments by an independent, qualified, registered, professional engineer as required by 40 CFR 264.192(a) are presented in Appendix E-A, Tank System Assessments and Certifications. Appendix E-A includes tank certification statements, tank containment certification statements, compatibilities of wastes with tank materials, tank system field notes, and examples of containment coatings. Individual tank drawings are provided in Appendix E-B, Tank Drawings.

Figure E.1, Hazardous Waste Management Areas (Drawing 50-01-10-001, Hazardous Waste Management Areas in Section Y), indicates the general location of the tank management areas in relation to the other portions of the facility. Figure E.2, Tank Locations (Drawing 50-55-10-002, Tank Locations in Section Y), shows the location of the individual tanks within the tank management areas. Piping and instrumentation diagrams, and process flow diagrams are presented in Section N, Air Emissions.

Figure E.1. Hazardous Waste Management Areas

Figure E.2. Tank Locations

RCRA hazardous waste, as well as a variety of non-hazardous wastes, may be managed in the different tank systems. A list of RCRA waste codes acceptable for storage or treatment in the tank systems are provided in Section A, Part A Permit Application. Any waste code listed in the Part A may be handled in any tank at the facility. In general, tanks V-1 through V-8, V-17, and V-26 are located within the Processing Area and have a total working capacity of 86,430 gallons. Materials stored or treated in these vessels are ignitable and non-ignitable, hazardous and nonhazardous liquids and sludges. Tanks V-9 through V-16, including V-15A through V-15D, are located within Building D and have a total working capacity of 50,132 gallons. Materials stored or treated in these vessels are non-ignitable, hazardous and nonhazardous liquids and sludges.

The secondary containment systems for ~~Safety-Kleen (Wichita), Inc's~~Clean Harbors Kansas, LLC's tank systems are designed such that no external shell of any tank, nor any external metal component of a tank will be in contact with soil or standing water (i.e., sloped containment, elevated systems, etc.). As a result of design criteria and operational procedures, the requirements of 40 CFR 264.192 (a)(3) (corrosion expert assessment) are not applicable. As required by 40 CFR 264.193 (c)(4), any accumulated precipitation in a secondary containment system will be removed within twenty-four (24) hours of detection, or in as timely a manner as possible.

**E-3 Operational Practices: 40 CFR 270.16(c),(i),(j), 264.194, 264.198, 264.199, 264.195**

The following information is supplied to meet the specific requirements of RCRA regarding tank operating practices.

**E-3a General Operating Requirements: 40 CFR 270.16(i), 264.194**

Any material that could cause the tank, ancillary equipment, or secondary containment systems to fail (i.e., rupture, leak, etc.) will not come into contact with the tank systems. Assessments for compatibilities of wastes with tank system materials are presented in Appendix E-A of this section.

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC will use the appropriate controls and practices to prevent spills and overflows from tanks and containment systems. Spill prevention controls may include check valves, dry disconnect couplings, vacuum or gas purge, permanently fixed or mobile catch pans, and secondary containment around the activity. Overfill prevention controls include level sensing devices, high level alarms, an automatic pump activated by a float sensor, overfill bypass to another tank, and/or visual inspections during transfer. The control systems for the various tank systems are shown in the Piping and Instrument Diagram (P&ID)s provided in Section N, Air Emissions. Tank systems in hazardous waste service have, at a minimum, the following overflow protection systems:

- Secondary containment with chemical resistant coating,
- Automatic high level alarms on each individual tank, and
- Manual gauging ports.

Automatic level gauges are provided on some tanks and may be used in addition to the protection systems listed above. Adequate freeboard will be maintained in open top tanks to prevent liquids from blowing out of the top of the tank.

**E-3b Description of Feed Systems, Safety Cutoff, Bypass Systems, and Pressure Controls: 40 CFR 270.16(c)**

Descriptions of the feed systems, safety cutoffs, bypass systems, and pressure controls are provided below for the tank systems, additional information (including P&ID drawings) can be found in Section N, Air Emissions.

**E-3b(1) Feed Systems, Safety Cutoff, and Bypass Systems:**

Automatic and manual level detection systems on all tanks are monitored each operating day material transfer to or from tanks takes place. Valves and pipe manifold stations are used to control flow to and from tank systems. Some tank system piping also incorporates check valves for added flow control safety. Tank systems can be isolated (by valves) from waste flow. Refer to Section N, Air Emissions for detailed P&ID drawings showing piping and valves.

**E-3b(2) Pressure Controls:**

The tank systems at ~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC have pressure and vacuum relief valves, or are vented to the atmosphere directly. Tanks V-1, V-3, V-4, V-7, and V-8 are low pressure tanks installed with pressure and vacuum relief valves set at approximately 14.5 pounds per square inch gauge (psig) pressure and approximately 0.5 ounce per square inch vacuum. In the event of a relief, these tanks are vented directly to the atmosphere. Tanks V-2, V-5, V-6, V-9 through V-14, V-15a through 15-d, V-16, and V-17 are closed top atmospheric tanks equipped with thief hatches with pressure relief set at approximately 2 ounces per square inch and vacuum relief set at 0.4 ounce per square inch. In the unlikely event of a relief, these tanks vent directly to the atmosphere. Tank V-26 is vented through a demister to the atmosphere, and tank V-18 is vented directly to the atmosphere.

As the newly proposed second phase of the air emission standards for hazardous waste facilities becomes final, ~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC will address and implement appropriate air emission control devices for the affected tank systems.

**E-3c Special Requirements for Handling Incompatible, Ignitable, or Reactive Waste: 40 CFR 270.16(j), 264.198, 264.199, 264.17(b)**

Proper precautions are and will be taken (when managing ignitable or reactive wastes, or mixing incompatible wastes or incompatible wastes and other materials) to prevent reactions which: 1) generate extreme heat or pressure, fire or explosion, or violent reactions; or 2) produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment. Wastes exhibiting the characteristics of reactivity will not be placed in any of the tank systems located at the LESW facility unless the waste is treated, otherwise managed, or mixed before or immediately after placement into a tank system so that:

- the resulting waste, mixture, or dissolved material no longer meets the definition of reactivity; or

- the waste is stored or treated such that it is protected from any material or conditions that may cause the waste to ignite or react; or

- the tank system is used solely for emergencies.

Tanks designated to accommodate storage of wastes exhibiting the characteristics of ignitability and reactivity will comply with the requirements for the maintenance of protective distances between the waste management area and any adjoining property lines as outlined in the National Fire Protection Association

(NFPA) "Flammable and Combustible Liquids Code" (1977 or 1981). Water and/or foam fire suppression systems are also located where required by NFPA regulations. Smoking or open flames will not be permitted in the vicinity of these tank systems. "No Smoking" signs are conspicuously placed wherever there is a hazard from ignitable or reactive waste.

Incompatible wastes or incompatible waste and material will not be placed in the same tank system for storage. A compatibility analysis will determine whether a waste meets the compatibility criteria for storage in a tank system. The procedures for this analysis are outlined in Appendix C-A, Waste Analysis Plan (WAP) located in Section C, Waste Characteristics, and will be performed when necessary to ensure that incompatible wastes or incompatible waste and material are only placed in the same tank system under controlled circumstances. There may be instances where an incompatible waste is used as a reagent to treat another waste in a tank, under controlled circumstances. Additionally, hazardous waste will not be placed in a tank system that previously held an incompatible waste or material unless compliance with 40 CFR 264.17(b) is demonstrated. Certifications for Compatibilities of Wastes with Tank Materials are located in Appendix E-A.

## E-3d Inspections: 40 CFR 264.195

A list of inspections performed for the various tank systems is provided in Section F, Inspection Plan. ~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC will document the results of these inspections in the operating record to be kept at the facility for a minimum of three years.

## E-3e Contingency Measures: 40 CFR 264.196

A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, will immediately be removed from service and ~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC will comply with the applicable requirements listed in 40 CFR 264.196. The Contingency/Emergency Plan (Section H), contains procedures for responding to a situation where there is a leaking or an unfit-for-use tank system.

## E-3f Tank Cleaning for Non-Hazardous Waste Service

Tanks that have been in hazardous waste service are cleaned prior to non-hazardous waste service. This cleaning procedure will consist of the following steps:

- remove wastes from tank systems by draining and/or pumping;
- flush hoses and piping by pumping an appropriate detergent or solvent in a volume roughly equivalent to the total volume of the pipe or hose; and
- remove residuals by pumping, scraping, brushing, and/or washing, as necessary.

When visual inspection of the tank shows no evidence of contamination, the tank system is considered to be available for non-hazardous waste or product service. The above procedures, while not intended to close a tank, will make it available for non-hazardous waste management.

In some circumstances, ~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC may opt to store non-hazardous wastes in a tank that previously held hazardous wastes, without first cleaning that tank. Under these circumstances, ~~Safety-Kleen~~Clean Harbors Kansas, ~~(Wichita), Inc.~~LLC will manage the non-hazardous wastes as if they are hazardous, in accordance with the mixture rule (40 CFR 261.3(b)).

E-4 Containment and Detection of Releases: 40 CFR 264.193, 270.16(g)

Secondary containment systems for tank systems are designed, installed, and operated to prevent migration of wastes or accumulated liquid to the soil or groundwater. The containment systems enable the detection of, and collection of, releases and accumulated liquids. Liquids accumulated in a CMU will be removed from containment systems within 24 hours or as soon as practicable.

Secondary containment systems for tank systems consist of concrete slabs surrounded with concrete walls or dikes of appropriate height. The containment systems are sloped or tanks are constructed above the floor to facilitate detection of any released material or other liquid. Accumulated liquids will be removed and managed appropriately. Each area has been designed to surround the base of the tanks and cover the surrounding earth most likely to come into contact with a release of waste. These design and operating factors are, in combination, capable of preventing potential lateral and vertical migration of hazardous waste constituents. The secondary containment systems have been designed to have sufficient structural strength and thickness to minimize the potential of failure owing to pressure gradients, physical

contact with waste, climatic conditions, and the stress of daily operations. Additionally, the foundations will provide resistance to pressure gradients above and below the system, and will minimize the potential for failure due to settlement, compression, or uplift.

Prior to placing a tank in hazardous waste service, the associated secondary containment system (slab, walls, dikes) will be coated with a sealant to protect the containment surface against chemical attack. The secondary containment systems consist of a liner (sealed concrete) that is free of cracks or gaps. Types of containment coatings previously used at ~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC include Siloxirane, Sentry Polymers Semstone 245 or other ~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC approved coatings which are effective against chemical attack and/or mechanical abuse. Appendix E-A contains secondary containment certifications for tank systems that are in service and coating specifications of the aforementioned coatings.

Tank system containment areas are inspected each operating day for the presence of liquids. Inspections will enable facility personnel to determine if failure of a tank or containment structure has occurred. Tank systems are either designed and constructed up and off the containment floor, provided with leak detection systems, or the containment area is sloped for ease of visually detecting leaks or spills. The design of tank system containment areas, in conjunction with facility inspections, facilitates the detection of accumulated liquids. Accumulated liquids collected in the secondary containment system will be removed within 24 hours or soon as practical, and managed according to the procedures described in the WAP as outlined in Section C, Waste Characteristics.

Ancillary equipment (e.g., pumps) associated with the various tank systems are located within the tank systems' secondary containment areas, within secondary containment areas for pumps, or within the containment area of an associated loading/unloading area. Therefore, sufficient secondary containment is provided for the ancillary equipment. All piping utilized for transfer of hazardous waste to and from the various units is above-ground and is inspected each operating day for leaks or damage.

Tank system secondary containment areas have been designed to provide sufficient capacity to contain 100 percent of the capacity of the largest tank within their boundaries or 10 percent of the total capacity of tanks and containers, whichever is greater. Also, each containment area has been designed (e.g., with berms, building walls, storm sewer, etc.) and is operated in a manner to prevent run-on. Tank systems are provided with roofing to minimize infiltration of precipitation. Adequate containment is provided to manage the volume of incidental blown precipitation. Tank system secondary containment capacity calculations and certifications are provided in Appendix E-A. Containment capacities for areas containing tanks or tanks and containers, are summarized in Table E.2, Tank System Containment Details. As shown in the table, the containment capacity provided by each containment area is greater than the capacity required.

| Table E.2<br>Tank System Containment Details | | | | | |
|---|---|---|---|---|---|
| LOCATION | NUMBER OF TANKS & CONTAINERS & GALLONS EACH | CAPACITY REQUIRED (gallons) * | CAPACITY AVAILABLE (gallons) * | SECONDARY CONTAINMENT DESCRIPTION | GENERAL UTILIZATION |
| Building D D400 | 6 @ 5,078<br>4 @ 2,659<br>1 @ 9,028 | 9,028 | 9,195 | Coated concrete curbs/slab inside a building | Storage of non-ignitable hazardous and nonhazardous liquids |
| Processing Area P100/P200 | 5 @ 7,181<br>1 @ 7,084<br>2 @ 20,895<br>1 @ 522<br>1 @ 1,129<br>180 @ 55 | 20,895 | 32,583 | Coated concrete walls/slab under a roof | Storage of non-ignitable and ignitable hazardous and nonhazardous liquids |

* Capacity calculations are provided in Appendix E-A

E-5 Installation of Tank Systems: 40 CFR 270.16(f), 264.192(b)-(g)

Prior to placing any tank system in service, an independent registered professional engineer or qualified inspector will inspect for the presence of:

- Weld breaks,
- Punctures,
- Scrapes of protective coatings,
- Cracks,
- Corrosion, or
- Any other structural damage or inadequate construction/installation.

All such discrepancies will be remedied, and tank assessments in compliance with 40 CFR 264.192 will be performed, certified, and documented, prior to use. Appendix E-A provides Certified Tank Assessments, including secondary containment design and capacity calculations, compatibility assessments, and field notes. Appendix E-B provides drawings and construction specifications for the individual tanks.

Minor repairs (e.g., piping or valve replacement) will be performed at the facility and tightness tested before the tanks are returned to service. Tank systems will be removed from service when major repairs are required. The method of repair will depend upon the nature and extent of the defect. Major repairs may require that the tank be removed for repair and/or sent to the manufacturer for modifications. Tank systems requiring major repairs will be recertified by an independent professional engineer prior to being placed back into service.

## E-6 Closure: 40 CFR 264.197

Final facility closure (i.e., closure of all waste tanks on site) or partial closure of a selected tank system will be performed as outlined in Section J, Closure Plan.

# Appendix E-A

# Tank System Assessments and Certifications

# Attachment 1, Tank Certification Statements

## Attachment 2, Tank Containment Certification Statements

Throughout this Attachment, the facility referred to as ~~"Safety Kleen (Wichita), Inc."~~"Clean Harbors Kansas, LLC" is the same facility

identified in the permit application as ~~"Safety Kleen (Wichita), Inc."~~"Clean Harbors Kansas, LLC."

# Attachment 3, Compatibilities of Wastes with Tank Materials

# Attachment 4, Tank System Field Notes

# Attachment 5, Examples of Containment Coatings

# Appendix E-C

# Documentation of Tank Ages

APPENDIX E-C

YEAR OF INSTALLATION OF HAZARDOUS WASTE TANKS

| VESSEL | YEAR INSTALLED | VESSEL | YEAR INSTALLED |
|---|---|---|---|
| V-1 | 1988 | V-12 | 1966 |
| V-2 | 1982 | V-13 | 1966[1] |
| V-3 | 1988 | V-14 | 1966 |
| V-4 | 1988 | V-15A | 1966 |
| V-5 | 1988 | V-15B | 1966 |
| V-6 | 1988 | V-15C | 1966 |
| V-7 | 1988 | V-15D | 1966 |
| V-8 | 1988 | V-16 | 1966 |
| V-9 | 1966 | V-17 | 1990 |
| V-10 | 1966 | | |
| V-11 | 1966 | V-26 | 1991 |

[1] Note: Tank V-13 was closed in place in September, 1996. It is anticipated that a replacement tank will be installed in the future.

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## List of Appendices



## Acronym Table

~~Safety-Kleen (Wichta), Inc. (SKW)~~Clean Harbors Kansas, LLC (CHK)
Remedial Work Order (RWO)
Emergency Response Coordinator (ERC)
Container Management Unit (CMU)

## F-1 Introduction:

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ~~(SKW)~~ (CHK) has developed this Inspection Plan in compliance with 40 CFR 264.15 and 270.14; changes to the inspection plan will be made in accordance with permit modification procedures found in 40 CFR 270.42. It is intended to provide a systematic method of identifying potential problems, malfunctions, or deterioration which may cause or lead to a release of hazardous constituents to the environment or a threat to human health. Inspections will be used to identify potential operational problems, and to identify required maintenance of in-service equipment and structures while the facility is operational or equipment is in service. The corrective program will include a Remedial Work Order (RWO) system to document and track the resolution of problems identified during inspections.

One or more inspectors will be designated to perform the inspections as scheduled. A record of the inspections and the schedule will be maintained at the facility. The results of the inspections will be recorded on an Inspection Log which will be maintained in the operating record. The Inspection Log will include the date, the time of the inspection, the name of the inspector, his/her initials, items examined, problems noted, and the identifying number of each RWO issued to address any problem noted. The nature and date of any repairs are recorded on the RWO when the repairs are completed. The RWO is then filed by identifying number in the operating record.

Potential problems identified on the inspection log will be corrected or addressed as soon as possible or practicable. If repairs are required, they will be made as soon as they can be safely and practically performed. If the problem identified is a threat to human health or the environment, then actions to mitigate the situation will be undertaken immediately. All steps necessary to allow the repairs (e.g., minimizing the exposure of the workers to hazardous materials, hazardous waste, or hazardous situations) will be taken prior to beginning the repair work. The inspection logs and RWOs will be maintained as part of the operating record for at least three years from the date of inspection. Examples of the inspection log are provided in Appendix F-A, Example of Inspection Log, and an example of the RWO is provided in Appendix F-B, Example of Remedial Work Order.

The facility inspector will communicate the occurrence of problems to the Operations Manager (or designee) through the RWOs. The timing of this notification will depend on the nature of the potential problem. A problem threatening human health or the environment would be reported immediately. If necessary, the inspector will notify the Emergency Response Coordinator (ERC) as required by Section H, Contingency/Emergency Plan.

## F-2 Inspection Requirements:

### F-2a General Inspection Requirements: 40 CFR 264.15(a) and (b), 264.33, 270.14(b)(5)

Appendix F-C, General Inspection Schedule, will include inspection of the facility perimeter, safety and emergency equipment, security devices, operating and structural equipment, general requirements of miscellaneous units, communication systems, alarm systems, fire protection equipment, and decontamination equipment.

F-2b **Specific Process Inspection Requirements:** 40 CFR 264.15(b)(4), 270.14(b)(5)

Specific inspection schedules for container, tank systems, and miscellaneous units are provided in Appendix F-D, Inspection Schedule for Containers, Appendix F-E, Inspection Schedule for Tank Systems, and Appendix F-F, Inspection Schedule for Miscellaneous Units.

F-2b(1) Container/ Container Management Unit Inspection: 40 CFR 264.174

The Container Management Unit (CMU)s will be inspected for adequate aisle space, potential spills or accumulation of liquids into secondary containment systems and loading or unloading areas, and deterioration of secondary containment area structures.

The containers will be visually inspected in accordance with Section C, Waste Characterization, for their condition (e.g., open, deteriorated, damaged, corroded, leaking, bulging such as may be caused by internal pressure build-up, etc.), and identification markings.

Refer to Section D, Use and Management of Containers, for a description of the CMUs. The inspection schedule for containers and container management units at the facility is presented in Appendix F-D, Inspection Schedule for Containers.

**F-1b(2) <u>Tank and Tank Systems Inspection:</u> 40 CFR 264.193(i), 264.195**

The items addressed by tank systems inspections include tanks, ancillary equipment, secondary containment systems, areas surrounding tank systems, tank overfilling control equipment, and other control or monitoring equipment. For example:

- The visible portions of the construction material of the tanks and their ancillary systems will be inspected for evidence of corrosion, deterioration, or erosion which could result in a leaking or unfit-for-use tank or tank system.

- The area immediately surrounding all tank systems including areas within the secondary containment systems will be inspected for obvious signs of deterioration, accumulated liquids, or potential releases of hazardous waste.

- Loading and unloading areas are inspected for obvious signs of deterioration, accumulated liquids, or potential releases of hazardous waste.

- Tank overfilling control and monitoring equipment is inspected visually or (periodically) for mechanical operation.

- The leak detection systems for the tanks are inspected for evidence of leakage, deterioration, or malfunction.

A list of the tanks and a description of the tank systems is provided in Section E, Tank Systems. Each of the tanks listed in Section E will be inspected for the applicable items listed above, according to Appendix F-E, Inspection Schedule for Tank Systems. Tank condition is assessed annually.

F-2b(3) **Miscellaneous Units:** 40 CFR 264.602

Inspection requirements for miscellaneous units include checks for releases, deterioration, or malfunction of each unit, and, as applicable, the unit's controls to prevent releases to the environment. These units are described in Section M, Other Regulated Units. Specific inspection items are addressed in Appendix F-F, Inspection Schedule for Miscellaneous Units.

Inspections with respect to miscellaneous units will follow the same procedures as all other regulated units. The inspections will identify potential operational problems and required maintenance of in-service equipment and structures while the facility is operational or equipment is in service. The corrective program will include a Remedial Work Order (RWO) type of system to document and track the resolution of problems identified during inspections.

## F-2b(4) RCRA Air Emissions Monitoring: 40 CFR 264, Subparts AA and BB

~~SKW~~CHK currently operates no units subject to the Subpart AA requirements. Air emissions monitoring requirements for Subpart BB are discussed in Section N, Air Emissions. Inspections required under Subpart BB are addressed in Appendix F-G, Inspection Schedule for RCRA Air Emissions Monitoring.

F-3 Inspection Schedule: 40 CFR 264.15, 270.14(b)(5)

The inspection schedules presented in Appendices F-C through F-G indicate the inspection frequency for each item on the schedule. Inspection frequencies may range from daily to annually, depending upon the item. The frequencies have been based on the rate of probable deterioration of equipment, equipment manufacturers' recommendations, and operating experience at other ~~Safety-Kleen~~Clean Harbors facilities. For example, areas within the facility subject to spills, such as truck loading and unloading areas, will be inspected daily when in use.

# APPENDIX F-A

# SAMPLE INSPECTION LOG

# APPENDIX F-B

## SAMPLE REMEDIAL WORK ORDER

Form May be Modified

| INSPECTION PARAMETER | INSPECTION PROCEDURE | INSPECTION FREQUENCY |
| --- | --- | --- |

# APPENDIX F-C

## GENERAL FACILITY INSPECTION SCHEDULE

| INSPECTION PARAMETER | INSPECTION PROCEDURE | INSPECTION FREQUENCY |
|---|---|---|
| General Facility and Perimeter | Visually check fences and gates for breaks or damage. | Monthly |
| | Visually check warning signs for clear visibility. | Monthly |
| | Visually check for erosion under fences. | Monthly |
| | Visually check access and intra-facility roads for spills. | Daily |
| | Visually check for vegetation obscuring warning signs along the fence. | Monthly |
| Safety and Emergency Equipment | Inspect tags of fire extinguishers for expiration dates and adequate pressure. | Monthly |
| | Test telephones for proper operation. | Monthly |
| | Test alarms for proper operation. | Monthly |
| | Test paging and loudspeaker systems for proper operation. | Monthly |
| | Inspect self-contained breathing apparatus (SCBA) for air pressure with a pressure gauge. Inspect regulators to verify that air passage is unobstructed. Visually check masks and hoses for serviceability. | Monthly |
| | Inspect first aid stations. | Monthly |
| | Inspect fire hydrants for adequate water supply, and leaks or evidence of corrosion. | Annually |

| INSPECTION PARAMETER | INSPECTION PROCEDURE | INSPECTION FREQUENCY |
|---|---|---|
| | Visually inspect sprinkler systems and other fire suppression systems. | Monthly |
| | Inspect external condition of safety showers and operate to verify adequate water flow. | Monthly |
| | Inspect external condition of eye wash stations and operate to verify adequate water flow. | Monthly |
| | Inspect spill response and decontamination equipment for operable condition. Spill response equipment includes the following:<br><br>Overpack drums<br>Absorbents<br>Portable pumps<br>Hand tools<br>Brooms<br>Detergent<br>Absorbent towels | Monthly |
| | Inspect inventory of Facility PPE for adequate supplies and operable condition. PPE includes the following:<br><br>Cartridge respirators<br>Supplied air respirators<br>Protective clothing<br>Specialized gloves<br>Specialized footwear<br>Hearing protection<br>Eye protection<br>Hard hats | Monthly |

# APPENDIX F-D

# INSPECTION SCHEDULE FOR CONTAINERS

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This schedule applies to active Container Management Units (CMUs) at ~~SKW,~~ CHK, except as noted.

| INSPECTION PARAMETER | INSPECTION PROCEDURE | INSPECTION FREQUENCY |
|---|---|---|
| Container Management System | Inspect containment system loading and unloading areas for evidence of spills or accumulated liquids. | Daily |
| | Inspect aisles in container storage areas for a minimum of two (2) feet of aisle space. | Daily |
| | Visually inspect containers for evidence of pressure build-up, structural damage, leaks, missing cap or bung, corrosion, or deterioration. | Weekly |
| | Visually inspect containers for legible markings or identification labels. | Weekly |
| | Inspect the container storage areas, concrete slab, and curbs for cracks, gaps, flaking, chips, gouges, and other signs of wear. | Daily |
| | Inspect sumps for presence of liquids. | Daily |
| | Inspect container management areas to ensure incompatible wastes are properly segregated. | Weekly |
| | Inspect equipment and conveyors for operability, condition. | Weekly |

# APPENDIX F-E

# INSPECTION SCHEDULE FOR TANK SYSTEMS

| INSPECTION PARAMETER | INSPECTION PROCEDURE | INSPECTION FREQUENCY |
|---|---|---|
| Tank System: | Where appropriate, visually inspect the exterior condition of the tank (e.g. for evidence of leaks, stains, corrosion etc.) and the area immediately surrounding the externally accessible portion of the tank systems for erosion or evidence of releases of waste (e.g., wet spots, discolorations). | Daily |
| | Inspect tank containment system (concrete slab, sumps, and curbs) for cracks, gaps, flaking, chips, gouges, wet areas, puddles, and other signs of wear and leaking. | Daily |
| | Where appropriate, inspect monitoring equipment installed on the tanks for evidence of damage. | Weekly |
| | Inspect tank loading and unloading areas for evidence of spills. Inspect hoses for signs of wear, leakage or other damage. Inspect hose couplings for proper seals and leaks and other damage. | Daily |
| Overfill Control System | Check electronic indicator system for operability. | Daily |
| | Manually check operability of overfill floats. | Quarterly |
| Containment for: Truck Docks and Unloading area | Visually inspect for evidence of spills. | Daily |

| INSPECTION PARAMETER | INSPECTION PROCEDURE | INSPECTION FREQUENCY |
|---|---|---|
| Sumps | Visually inspect for standing liquids. | Daily |
| | Visually inspect for cracks, gaps, or deterioration. | Weekly |
| Process Equipment (Conveyors, Valves, Feeders) | Visually inspect for corrosion, deterioration. | Daily |
| | Visually inspect to assure guards are in place. | Daily |

# APPENDIX F-F

## INSPECTION SCHEDULE FOR MISCELLANEOUS UNITS

| INSPECTION PARAMETER | INSPECTION PROCEDURE | INSPECTION FREQUENCY |
|---|---|---|
| Miscellaneous Units | Check surface of unit for evidence of leaks or structural damage. | Daily, when in service |
| | Inspect the secondary containment, coating (where present), concrete slab, and curbs for cracks, gaps, flaking, chips,gouges, and other signs of wear. | Daily, when in service |

# APPENDIX F-G

## INSPECTION SCHEDULE FOR RCRA AIR EMISSIONS MONITORING

| INSPECTION PARAMETER | INSPECTION PROCEDURE | INSPECTION FREQUENCY |
|---|---|---|
| Pumps and Ancillary Equipment | Monitor for volatile air emissions as required. | Monthly and Annually |
| | Visually monitor as required for evidence of leaks. | Daily when in use |

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## List of Figures



## List of Referenced Drawings

Drawings located in Section Y, Referenced Drawings

Drawing 50-01-01-002, Facility Layout

## List of Acronyms

~~Safety-Kleen (Wichita), Inc. (SKW)~~Clean Harbors Kansas, LLC (CHK)
Public Address (PA)
Hazardous Waste Management Unit (HWMU)
Container Management Unit (CMU)
Personal Protective Equipment (PPE)
Self-Contained Breathing Apparatus (SCBA)
National Fire Protection association (NFPA)

## G-1 Introduction

Waste management processes at ~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC ~~(SKW)~~ (CHK) are designed with safety features for protection of human health, the environment, and the general public. This section is a description of the measures used to prevent hazards during waste management at the facility. The hazardous waste units at the facility include storage tanks, container management units, loading and unloading facilities, and waste treatment equipment.

## G-2 Security: 40 CFR 264.14, 270.14(b)(4)

### G-2a Security Procedures and Equipment:

The ~~SKW~~CHK facility will be secured to prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility, to protect human health and the environment. (The active portion of the facility, hereinafter referred to in this section as "the facility," is as defined by 40 CFR 261.10.) This will be accomplished by provisions such as, fencing, gates, an electronically controlled security system, and warning signs. Presence of facility personnel during shift operations will minimize or prevent incidents of trespassing and vandalism. Fencing is not provided where buildings and building entrances provide a barrier to unauthorized entry. In addition, employees are instructed to question and direct unauthorized visitors to the office should they try to enter the facility. These security provisions are further discussed below.

- Fence: where required for security, the facility is surrounded by a six (6) foot high chain link fence with gates at various locations. Figure G.1, Facility Layout, Drawing 50-01-01-002, Facility Layout gives the location of fencing and gates. Entry into the facility will be controlled by the fencing, gates, and buildings. Gates and doors which allow access to the facility are to remain closed and secured against entry unless in use. Personnel and vehicle access will be controlled by an electronic system or by designated facility personnel.

Figure G.1. Facility Layout

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- Vehicle Access: Vehicles must be authorized to enter the facility. Normal vehicle access is through the main entrance; this entrance is provided with electronic controls. However, when attended by facility personnel, other gates may be used with prior authorization. These secondary gates may also be used while evacuating the facility. In the event of a failure or scheduled shutdown of the electronic gate system, the main entrance gate will be operated manually. The operation of the secondary gates will not be affected by a power failure, since these gates will not be electronically controlled.

- Personnel Access: These procedures are designed to control unauthorized entry into the facility. Access into the facility will be controlled by the fencing, gates, buildings, and facility personnel. Non-employee personnel including contractors, consultants, governmental agency personnel and visitors will be required to sign in prior to being granted entry into the facility. Entry to the facility will be monitored by facility personnel.

. Warning signs: Warning signs will be posted on or adjacent to all gates. The signs, written in English, will state at a minimum, "DANGER - UNAUTHORIZED PERSONNEL KEEP OUT." The lettering on warning signs will be at least two (2) inches high to be legible from a distance of twenty-five (25) feet. The lettering and the sign background will be contrasting colors. Warning signs will also be placed along the fence and, where appropriate, along building exterior walls so as to be seen from any approach to the facility.

Signs are posted inside the facility to warn personnel about potential hazards. These signs may be required, for example, by OSHA regulations (e.g., NO SMOKING, EYE PROTECTION REQUIRED, HEARING PROTECTION REQUIRED, DANGER - HIGH VOLTAGE, etc.). The signs will be located as appropriate.

G-3 Inspection Schedule: 40 CFR 264.15, 264.33, 264.174, 270.14(b)(5)

~~SKW~~CHK has developed an Inspection Plan to provide a systematic method of identifying potential problems, malfunctions, or deterioration which may cause or lead to a release of hazardous constituents to the environment or a threat to human health. The facility inspection plan, including inspection schedules, is presented in Section F, Inspection Plan.

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## G-4 Preparedness and Prevention Requirements: 40 CFR 270.14(b)(6)

~~SKW~~CHK is operated and maintained to minimize the possibility of hazards such as fire, explosion, or unplanned release of hazardous waste, etc. to air, soil, or surface water which may threaten human health or the environment. The inspection schedule for facility safety and emergency equipment is provided in Section F, Inspection Plan.

### G-4a Equipment Requirements: 40 CFR 264.32

#### G-4a(1) Internal Communications: 40 CFR 264.32(a)

Communications inside ~~SKW~~CHK can be achieved through a telephone system and a Public Address (PA) system. Telephones will be located so that employees will have access to a phone. An employee will be able to call any other telephone in the facility, and can access the PA system for paging. The paging system will broadcast through a series of loudspeakers. Two way communication devices or paired work crews (i.e., the buddy system) will ensure that every employee has immediate access to communication in the event of an emergency.

The internal communication system will be tested monthly, as indicated in the Inspection Plan, Section F. However, use of the internal communication system during the course of normal operations will more quickly identify developing problems.

An alarm system will alert personnel to major emergencies. Alarms will consist of a siren (activated at manual pull stations) or a broadcast over the paging system loudspeakers (activated by dialing the appropriate code at any telephone). Emergency telephone numbers and instructions are posted at or nearby every telephone in the active portion of the facility; emergency telephone numbers are also available in office areas.

**G-4a(2) <u>External Communications:</u> 40 CFR 264.32(b)**

External facility communications will be available through the local telephone company. Local (Wichita) or long distance telephone connections are available. Arrangements for emergency response have been made with appropriate outside agencies; see the Contingency/Emergency Plan, Section H.

G-4a(3) **Emergency Equipment:** 40 CFR 264.32(c)

Portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment will be available at the facility. Descriptions, locations, and a list of emergency equipment for the facility are provided in Section H, Contingency Plan. Emergency equipment is inspected for availability and readiness according to the schedule given in Section F, Inspection Plan.

G-4a(4) **Water for Fire Control:** 40 CFR 264.32(d)

The facility has a supply of water available for fire fighting. Water for fire protection is supplied by a water main which is part of the City of Wichita public water system. Hazardous Waste Management Unit (HWMU)s are provided with appropriate fire protection systems meeting the applicable requirements of the City Building Code and NFPA. These systems are designed to extinguish or confine the spread and area of exposure of a fire. The systems may consist of fire hydrants, overhead sprinkler systems, or other types of fire protection systems.

A description of the fire protection equipment at ~~Safety-Kleen (Wichita) Inc.~~Clean Harbors Kansas, LLC is included in Section H, Contingency Plan.

G-4b <u>Aisle Space Requirement:</u> 40 CFR 264.35

Container Management Unit (CMU)s will have access aisles maintained to allow hand held and portable emergency response equipment to be moved. Adequate aisle space is maintained to allow unobstructed movement of personnel, fire protection equipment, or spill control equipment; and is ensured by regular inspections, per the inspection schedule in Section F, Inspection Plan. Container management areas will have a minimum aisle space of two (2) feet as described in Section D. Sufficient aisle space will be provided within the tank storage areas to allow access in an emergency situation.

G-5 **Preventive Procedures, Structures, and Equipment:** 40 CFR 270.14(b)(8)

Various structures have been constructed, safety features have been incorporated, and operating procedures have been developed, to minimize hazards to human health and the environment. Procedures, equipment, and structures utilized to prevent hazards are described in the following sections.

- A description of the Container Management Units is provided in Section D, Use and Management of Containers.

- A description of tank systems is provided in Section E, Tank Systems.

- A list of emergency equipment and a description of the emergency procedures are provided in the Contingency /Emergency Plan, Section H; a copy of this plan will be available at the facility at all times.

- Additional information regarding operating procedures are described in Section C, Waste Characterization, Section F, Inspection Plan, and Section I, Training Program.

Appropriate material handling equipment and devices will be employed in the waste management areas. Applicable safeguards will be observed during repairs performed near ignitable materials (e.g., no smoking, no sparks, no open flames, etc.). Special precautions will be taken to prevent accidental ignition of ignitable wastes or the uncontrolled mixing of incompatible wastes (Refer to G-6 of this section).

### G-5a Loading and Unloading Operations: 40 CFR 270.14(b)(8)(i)

Facility operations personnel receive training on proper loading and unloading procedures. This training will include instruction on machinery operation, safety equipment, waste identification, and processing procedures. A description of the personnel training plan (e.g., job-specific training) is provided in Section I, Training Program.

Various structures and equipment are utilized during loading and unloading operations to prevent environmental and health hazards. Container Management procedures are detailed in Section D, Use and Management of Containers.

Standard loading/unloading procedures are described below.

- Bulk Liquid Wastes: Prior to loading or unloading a bulk liquid container (e.g., a tanker truck) the operator will visually check valve position, that hoses are secured, and that any needed hose connection plugs and caps are in place. Following the loading or unloading of a bulk liquid container, the operator will visually check valve position, and that any needed hose connection plugs and caps are in place. Bulk metal containers holding ignitable liquid wastes will be grounded and bonded prior to loading or unloading.

- Bulk Solid Wastes: Many types of bulk solid and sludge containers will arrive by truck or rail. The containers may include sludge boxes, intermodal containers, end-dump trucks, etc. The contents of bulk containers of solids and sludge will be either directly unloaded into tanks or other containers, or the containers may be stored in CMUs prior to treatment or handling. At a minimum, two persons will be present during the waste loading/unloading operations.

- Containerized Wastes: Elevated docks are provided to facilitate loading and unloading of containerized wastes at the Drum Dock, and at Building J. Trucks are loaded or unloaded using an industrial truck or a drum dolly, or other appropriate container handling equipment. Containers are typically fifty-five (55) gallon drums, although larger and smaller containers may also be handled.

Manual handling of the containers will be minimized. Industrial trucks are capable of lifting and transporting one or more containers at a time. Drum grapplers (e.g., a semi-circular shaped arm attachment to the forks) or fork attachments for the forklift truck will be used for lifting and transporting individual containers. These drum grasping attachments are capable of securely holding a container during lifting and transporting without requiring additional straps or hooks. The operator is responsible for ensuring that the truck and the dock or ramp are properly aligned before any loading or unloading activities are initiated.

Drum dollies may be used to move individual containers (typically drums). The dollies have forks or a plate which can be inserted beneath the bottom of an individual container to support the container during lifting and transporting. The dollies either have a clip to secure the top of the container, or are shaped in an arc to cradle the container during lifting and transport. These drum dollies have features capable of holding a container during lifting and transporting without requiring additional straps. Some manual handling of the containers may be necessary.

G-5b Run-off and Run-on: 40 CFR 270.14(b)(8)(ii)

Precipitation and spills in waste management areas will be contained by dedicated secondary containment structures. These structures will prevent run-off to the environment or other facility areas. Secondary containment systems may contain one or more sumps to allow collection and removal of any accumulated liquids. Accumulated liquids will be managed in accordance with Section C, Waste Characterization. Containment systems not protected from precipitation by a building have been designed to accommodate the intrusion of precipitation from a twenty-five (25) year, twenty-four (24) hour storm event. Drawings showing the design and dimensions of containment systems are provided in Sections D, Use and Management of Containers and E, Tank Systems of this permit application.

Precipitation falling outside of the containment areas is controlled to prevent run-on of storm water into a waste management unit. Storm water falling into the active areas of the site is managed through a storm water drainage system.

Spills of hazardous waste will be promptly controlled and removed, when discovered, to prevent the spread of contaminants. Spill response procedures are provided in Section H, Contingency/Emergency Plan. The spilled material and any absorbent used will be placed into appropriate containers. The waste will be managed in accordance with Section C, Waste Characterization.

**G-5c** **Water Supplies:** **40 CFR 270.14(b)(8)(iii)**

Operations at ~~SKW~~CHK will require water for potable and process usage. Water supplies include City of Wichita water as well as ground water available on site. City (potable) water will be used for personnel decontamination (e.g., eye-wash stations, safety showers, and sanitary needs).

Process water is used for waste treatment, equipment decontamination, fire fighting, etc. The process water will be supplied either from the City of Wichita distribution system or from ground water at the facility. Potable and process water are distributed, as needed, throughout the facility. Physical separation will be used to prevent contamination of the water in a delivery system by back-siphoning of contaminants.

G-5d **Equipment and Power Failure:** 40 CFR 270.14(b)(8)(iv)

Normally, the electrical requirements of ~~SKW~~CHK will be met with power purchased from the local power utility. There are no processes involving high pressures or reactions which, as a result of a power outage, might "run away" and cause fires, explosions, or other sudden releases of hazardous waste.

In the event of a power outage, facility personnel will proceed as follows.

- Cease operations
- Switch off process equipment
- Close appropriate valves
- Report to their supervisor(s) for further instructions

G-5e **Personal Protective Equipment:** 40 CFR 270.14(b)(8)(v)

Personal Protective Equipment (PPE) available at the facility will include the following.

- Self-Contained Breathing Apparatus (SCBA): A portable device to supply breathing air will be available on-site.

- Cartridge respirator: Employees will be issued the appropriate mask and cartridges for the work area. Cartridges for the masks will be stocked at the facility.

- Supplied air: Buildings I and J will be equipped with a supplied air system to minimize the necessity for respirators in the container handling areas.

- Protective clothing: Employees performing specific tasks in HWMUs will be issued hard hats, protective coveralls, safety glasses, chemical resistant steel toe boots, specialized gloves, and hearing protection as appropriate. A supply of the appropriate protective clothing will be maintained at the facility.

Minimum PPE for all personnel within the active portion of the facility is a hard hat and eye protection. This minimum protection level will not apply to personnel within passenger vehicles, the administration building, control rooms, or any other office space within the facility in which the risk of a head or eye injury does not exceed normal office work risks. Personnel within specific waste management units will be provided with a hard hat, eye protection, and chemical resistant boots. Additional PPE will be provided as required for specific tasks.

Employees will be trained in proper PPE decontamination during their introductory training.

G-5f Prevention of Releases to Atmosphere: 40 CFR 270.14(b)(8)(vi)

The facility is designed, constructed, maintained, and operated to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment as required by 40 CFR 264.31.

The facility Inspection Plan (Section F), Emergency/Contingency Plan (Section H), and Training Plan (Section I) have been developed to enable the facility to prevent releases including emissions and to respond to any releases that may occur.

Waste management practices designed to minimize potential releases to the atmosphere include procedures as specified in 40 CFR 264.173. Containers remain closed during storage, except when it is necessary to add or remove waste or reagents. Containerized hazardous waste is managed in a manner which minimizes the potential for rupture of containers or damage to containers which could result in leakage. Ramps and automated transfer equipment facilitate safe movement of waste between management areas.

Tank and process unit management practices are designed to comply with the requirements of 40 CFR 264.194. Materials are not intentionally placed in a tank system or process unit if they could cause the unit to rupture, leak, corrode, or otherwise fail. Some of the process units are equipped with emission control devices, as discussed in Section M, Other Regulated Units. Tank systems deemed unfit for use will be removed from service as required by 264.196. Releases from tank systems or process units will be removed and/or cleaned up at the earliest practicable time to minimize potential for release to atmosphere by evaporation.

An emissions monitoring program for equipment subject to 40 CFR Subpart BB is in place at the facility. Details regarding this program presented in Section N (Air Emissions) of this application.

## G-6 Prevention of Reaction of Ignitable, Reactive and Incompatible Wastes:

### G-6a Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste and Mixing of Incompatible Wastes: 40 CFR 264.17(a), 270.14(b)(9)

Precautions will be taken at the facility during storage, treatment, or handling to avoid the accidental ignition or reaction of waste and mixing of incompatible wastes. These precautions are intended to prevent generation of undesirable heat, pressure, fire, explosion, toxic gases, or fumes which could result in damage to the structural integrity of any portion of the facility or cause a threat to human health or the environment. The precautions will include the following.

- Ignitable waste will be protected from open ignition sources such as open flames, metal welding and cutting, hot surfaces, frictional heat, smoking, and sparks (static, electrical, or mechanical). Tanks storing ignitable wastes will be grounded to protect the contents from ignition by a spark. Bulk metal containers (tank trailers and transport tanks) of ignitable liquid wastes will also be grounded and bonded before and during transfer of material through pipes or hoses. Signs prohibiting smoking will be conspicuously placed within and near the ignitable waste storage areas. Applicable safeguards (e.g., no smoking, no sparks) will be observed during repairs performed near ignitable materials.

- Buildings which enclose waste processing operations will be ventilated appropriately to avoid an accumulation of hazardous mists, vapors, dusts, or gases; or of flammable vapors or gases.

- Ignitable and reactive wastes are stored at least fifty (50) feet away from the facility boundary.

## G-6b Management of Ignitable or Reactive Wastes in Containers: 40 CFR 264.176, 270.15(c)

Ignitable or reactive wastes in containers may be either solid, sludge, or liquid. Ignitable or reactive wastes in containers will be managed in accordance with the following guidelines.

- Ignitable or reactive wastes are protected from spontaneous ignition caused by heat-producing chemical reactions by segregating incompatible wastes in separate CMUs. Segregated secondary containment will prevent mixing of incompatible wastes.

- The buildings have been designed to comply with the City Building Code and the appropriate codes of the National Fire Protection Association (NFPA). Interior and exterior walls of the CMUs meet the requirements of the applicable Building Code and NFPA codes. Equipment and personnel access doors meet the applicable codes.

- Containerized ignitable or reactive liquid wastes may be decanted and transferred to a storage tank for blending or processing through the Processing Area, re-containerized for shipment, treated in containers, or shipped off-site in their original containers.

Section G-6d provides information on the management of ignitable and reactive wastes in tanks.

G-6c Management of Incompatible Wastes in Containers: 40 CFR 264.177, 270.15(d)

Measures to prevent the inadvertent mixing or commingling of incompatible wastes in containers will include the following:

- Incompatibility between wastes or a waste and a container will be determined in accordance with Section C, Waste Characterization.

- Containers of waste received within one truck trailer will be unloaded and managed as described in Section C, Waste Characterization. If, during incoming load analysis, incompatible wastes in a common CMU are identified, the containers holding the incompatible waste will be removed and placed in an appropriate area or provided with a portable containment system. Section D, Use and Management of Containers provides a description of the container storage and processing procedures.

. Wastes found to be incompatible under the procedures in Section C will not be placed in the same container except under controlled circumstances during treatment. Wastes added to containers must be compatible with the container itself.

G-6d Management of Ignitable or Reactive Wastes in Tanks: 40 CFR 264.198, 270.16(j)

Proper precautions are and will be taken (when managing ignitable or reactive wastes) to prevent reactions which: 1) generate extreme heat or pressure, fire or explosion, or violent reactions; and 2) produce uncontrolled toxic mists, fumes, dusts, gases in sufficient quantities to threaten human health or the environment. Wastes exhibiting the characteristic of reactivity will not be placed in any of the tank systems located at the ~~SKW~~CHK facility unless the waste is treated, otherwise managed, or mixed before or immediately after placement into a tank system.

Reactive wastes will be stored in tanks or containers in such a way that they are protected from materials or conditions which might produce a dangerous or unacceptable reaction.

Liquid wastes which exhibit the characteristics of ignitability will be placed in appropriate tanks or containers for storage and/or treatment at the facility. Section E, Tank Systems, provides details regarding hazard management in tanks. All ignitable wastes will be stored more than fifty feet from the ~~SKW~~CHK property boundary.

G-6e Management of Incompatible Wastes in Tanks: 40 CFR 264.199, 270.16(j)

Proper precautions are and will be taken (when managing incompatible wastes, or mixing incompatible wastes or incompatible wastes and other materials) to prevent reactions which: 1) generate extreme heat or pressure, fire or explosion, or violent reactions; and 2) produce uncontrolled toxic mists, fumes, dusts, gases in sufficient quantities to threaten human health or the environment. Measures to prevent the inadvertent mixing or commingling of incompatible wastes in tanks will include the following:

- Compatibility will be determined in accordance with Section C, Waste Characterization.

- Incompatible wastes will not be placed in the same tank unless the waste is treated, otherwise managed, or mixed before or immediately after placement into a tank system. The characterization of waste for compatibility is determined according to Section C, Waste Characterization. If waste is added to a contaminated, empty tank, the waste must be compatible with the previous contents of the tank.

If waste is to be placed in a tank which previously held a waste with which it would be incompatible, then the decontamination procedures in Section C, Waste Characterization will be followed.

G-7 Air Emission Standards for Equipment Leaks: 40 CFR 264.1050 - 264.1065, 270.25

Fugitive emissions from equipment associated with management of hazardous waste contacting or containing ten (10) percent by weight of organics are regulated under Subpart BB of Part 264. Details regarding these requirements are addressed in Section N, Air Emissions.

# APPENDIX G-A

## SAMPLE INSPECTION LOG SHEET

Form May be Modified

## Table of Contents

## ~~List of FiguresList of Figures~~List of Figures



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## Acronym Table~~TableAcronym Table~~

~~Safety-Kleen (Wichita), Inc. (SKW)~~Clean Harbors Kansas, LLC (CHK)
Emergency Response Coordinator (ERC)
City of Wichita Fire Department (CWFD)
Hazardous Materials Response Team (HMRT)
City of Wichita Police Department (CWPD)
National Response Center (NRC)
Reportable Quantity (RQ)
Local Emergency Planning Committee (LEPC)

Kansas Department of Health and Environment (KDHE)
National Fire Protection Association (NFPA)
Personal Protective Equipment (PPE)
Self-Contained Breathing Equipment (SCBA)

H-1 ~~Introduction:H-1 Introduction:H-1 Introduction: 40 CFR 264.51(a), 264.53 (a),(b), 264.54~~Introduction:

This Contingency/Emergency plan, when implemented, will minimize hazards to human health and the environment due to events such as fires, explosions, and/or releases of hazardous waste. This plan contains provisions addressing the requirements of 40 CFR Part 270 and 40 CFR Part 264. It is presented in a format designed to be useful for employees and response personnel during an emergency and for employee training purposes.

Copies of the plan will be kept at the facility and provided to the appropriate local authorities and emergency response agencies that may be called upon to provide emergency services. Amendment of the Emergency/Contingency Plan will be performed in accordance with the permit modification requirements of 40 CFR 270.42. The plan will be reviewed and may be amended, if necessary, whenever:

~~?~~* the permit is revised;

?* the plan may be improved by addressing shortcomings noted during practice or actual implementation;

?* the list of Emergency Response Coordinators (ERC) changes, or the list of emergency equipment changes;

~~?~~* the facility changes in a way that materially increases the potential for fires, explosions, releases of hazardous waste or hazardous waste constituents; or

~~?~~* the facility changes in a way that affects the implementation of the plan.

## H-2 General~~Information:H-2~~ ~~General Information:H-2~~ ~~General~~ Information: 40 CFR 264.52, 264.53

### H-2a Facility~~name:H-2a~~ ~~Facility name:H-2a~~ ~~Facility~~ name:

~~Safety-Kleen (Wichita), Inc. Laidlaw Environmental Services, (Wichita) Inc. (LESW)Laidlaw Environmental Services, (Wichita) Inc. (LESW)~~Clean Harbors Kansas, LLC

### H-2b Owner and Operator of~~Facility:H-2b Owner and Operator of Facility:H-2b Owner and Operator of~~ Facility:

#### H-2b(1) Facility~~Operator:H-2b(1) Facility Operator:H-2b(1) Facility~~ Operator:

~~Safety-Kleen (Wichita), Inc., a subsidiary of Safety-Kleen Corp.~~Clean Harbors Kansas, LLC
2549 North New York Avenue
Wichita, Kansas 67219

**~~H-1b(2)~~ ~~Facility Owner(s):H-1b(2)~~ ~~Facility Owner(s):H-1b(2)~~H-2b(2) Facility Owner(s):**

~~Safety-Kleen (Wichita), Inc., a subsidiary of Safety-Kleen Corp.~~

~~1301 Gervais Street~~

~~Columbia, South Carolina 29201~~

Clean Harbors Kansas, LLC

2549 North New York Avenue

Wichita, Kansas 67219

~~H-1b(3) Facility Telephone Number: H-1b(3) Facility Telephone Number: H-1b(3)~~ H-2b(3) Facility Telephone Number:

Office: 316/269-7400

Note: See Table H-1 for telephone numbers for Emergency Response Coordinators.

H-2c Location: ~~-2c Location: H-2c Location:~~

The facility is located at 2549 North New York Avenue in Wichita, Sedgwick County, Kansas, ZIP code 67219.

This address is in the Northeast quarter of the Southeast quarter of Section 4, Township 27 South, Range 1 East.

H-2d Layout and Site~~Plan: H-2d Layout and Site Plan: H-2d Layout and S~~Plan

See Figure H.1, Emergency Equipment/Evacuation~~RoutesFigure H.1, Emergency Equipment/Evacuation RoutesFigure H.1, Emergency Equipment/Evacuation Routes, Drawing 50-01-03-002, Emergency Equipment/Evacuation RoutesDrawing 50-01-03-002, Emergency Equipment/Evacuation RoutesDrawing 50-01-03-002, Emergency Equipment/Evacuation Routes~~Routes, Drawing 50-01-03-002. Note: Full size reference drawings are available for review from the facility, and are included in Section Y of the Part B permit application, Referenced Drawings.

~~1~~

Figure H.1. Emergency Equipment/Evacuation Routes

## H-2e Description of Facility~~Operations:H-2e Description of Facility Operations:H-2e Description of Facility~~ Operations:

~~SKW~~CHK treats, recovers for recycling, and stores for subsequent off-site disposal, hazardous and nonhazardous wastes. Detailed operating and design descriptions are presented in the facility RCRA Permit Application (Parts A and B), which is available for review at the facility. Appendix H-A, List of EPA Waste ~~CodesAppendix H-A, List of EPA Waste CodesAppendix H-A, List of EPA Waste Codes~~Codes ~~,~~ identifies RCRA regulated wastes which may be present in the facility. All RCRA regulated storage areas and treatment equipment will have secondary containment structures, which provide adequate run-on and run-off controls.

**H-3 Emergency Response~~Coordinators:H-3 Emergency Response Coordinators:H-3 Emergency Response~~ Coordinators: 40 CFR 264.52(d), 264.55**

The Emergency Response Coordinator ~~(ERC)Emergency Response Coordinator (ERC)Emergency Response Coordinator (ERC) will~~(ERC) will be responsible for implementing the Contingency/Emergency plan as necessary in the event of an exigent situation. Each of the personnel listed in Table H-1, Emergency Response Coordinators, are qualified to assume the responsibilities of ERC. Each ERC will be familiar with all aspects of the facility's Contingency/Emergency Plan, operations and activities at the facility, the location and nature of wastes handled, the location of records within the facility, and the facility layout. An attempt will be made to contact the primary ERC in the event of an exigency; if the primary ERC is not available, the alternate ERC(s) will be called until one is reached.

The personnel listed in Table H-1, Emergency Response Coordinators,~~H-1, Emergency Response Coordinators,Table H-1, Emergency Response Coordinators,~~ have full authority to commit all facility resources necessary to carry out the Contingency/Emergency Plan. A letter providing authorization for action by an ERC is provided in Appendix~~H-B, Emergency Response Coordinator AuthorizationAppendix H-B, Emergency ResponseCoordinator AuthorizationAppendix~~ H-B, Emergency Response Coordinator Authorization.

## Table H-1

## Emergency Response Coordinators

Primary Emergency Response Coordinator

Name: Brian Key
[redacted]
316/269-7400 (work)
[redacted]

Ex. 6 PII

Alternate Emergency Response Coordinator

Name: Rusty Dunn
[redacted]
316/269-7400 (work)
[redacted]

## H-4 ~~Implementation:H-4 Implementation:H-4~~ Implementation: ~~40 CFR 264.52(a), 264.56(d)~~

This Plan will be implemented in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or waste constituents which may threaten human health and the environment. The ERC will be contacted if a fire, explosion, or release of hazardous waste might warrant implementation of this Plan. The ERC will determine whether implementation of the Contingency/Emergency Plan is necessary. Minor events which do not meet these criteria may be resolved with due regard to personnel health and safety without implementation of this plan. The following types of situations may be justification for implementing this plan.

### H-4a Fires and/or~~Explosions:H-4a Fires and/or Explosions:H-4a Fires and/or~~ Explosions:

~~?~~* Fire which may cause harm to human health.

~~?~~* Fire which may cause release of toxic fumes.

- ~~?~~* Fire which may spread and could possibly ignite other nearby materials, either on-site or off-site, or could cause heat-induced explosions.

- ~~?~~* Use of fire suppressants which could result in contaminated run-off.

- ~~?~~* Explosion which has or could:
  - ~~?~~* result in danger from flying fragments or shock waves
  - ~~?~~* ignite other hazardous waste at the facility
  - ~~?~~* release toxic fumes.

**H-4b Material~~Releases:H-4b~~ ~~Material Releases:H-4b~~ ~~Material~~ Releases:**

- ~~?~~* A release of toxic vapors or a significant volume of flammable liquids or vapors that could present a fire or vapor explosion hazard.
- ~~?~~* A release which could result in off-site soil contamination and/or surface water contamination.

~~?~~* A release that could endanger human health or the environment for other reasons.

**H-5 Emergency Response Procedures:**

~~**Procedures:H-5 Emergency Response Procedures:H-5 Emergency**~~

~~**Response Procedures: 40 CFR 264.56**~~

**H-5a Notification~~Procedures:H-5a Notification~~**

**~~Procedures:H-5a Notification~~ Procedures: 40 CFR 264.56(a)(2), 264.56(d)**

In the event of an emergency which may require notification of outside authorities, the ERC or person designated by the ERC, shall call the appropriate emergency authorities; the KDHE will be notified within 24 hours or in as timely a manner as is possible of any events that result in implementation of this Emergency/Contingency Plan.

A telephone listing of these authorities is provided in Appendix H-C, Emergency Telephone List of Local Authorities~~H-C, Emergency Telephone List of Local AuthoritiesAppendix H-C, Emergency Telephone List ofLocal Authorities~~. This telephone list will be posted at or nearby every telephone in the active portion of the facility;

emergency telephone numbers are also available in office areas. The person initiating the call will provide as much of the following information as is available.

- ?* Name of caller
- ?* Name of facility and telephone number
- ?* Address and location of Facility
- ?* Time and type of incident
- ?* Type and quantity of material(s) involved
- ?* Extent of injuries
- ?* Possible hazards to health and environment outside the facility

The specific authorities to be notified are as follows.

?* The Sedgwick County Emergency Medical Service (EMS) will be called to respond to injuries to personnel as needed. Arrangements to treat personnel injuries have been made with Via Christi (St. Francis) Emergency Center.

?* In the event of a fire, explosion, or major spill, the City of Wichita Fire Department (CWFD) ~~(CWFD) City of Wichita Fire Department (CWFD)~~ will be notified as needed. Arrangements have been made with the CWFD Hazardous Materials Response Team (HMRT) ~~(HMRT) Hazardous Materials Response Team (HMRT)~~; the HMRT is prepared to respond to a fire, explosion, or major spill at the ~~SKW~~CHK facility.

?* Similarly, for situations which may require response from the local police (i.e., evacuation), the City~~of Wichita Police Department (CWPD) City of Wichita Police Department (CWPD) City~~ of Wichita Police Department

(CWPD) will be notified. If the CWPD officials determine that additional assistance is needed, they may contact the Sedgwick County Sheriff, and/or the Kansas Highway Patrol.

In the event that the ERC determines that the facility has had a release, fire, or explosion which could threaten human health or the environment outside the facility, the appropriate local emergency authorities will be notified. The ERC will be available to assist authorities in evaluating the situation regarding potential evacuation of an area outside of the facility. In addition, the National Response Center (NRC) ~~(NRC) National Response Center (NRC)~~ will be notified in the event of a release of a Reportable~~Quantity (RQ) Reportable Quantity (RQ) Reportable~~ Quantity (RQ) within a twenty-four (24) hour period.

If there is evidence of a Section 304 RQ release off site, the Local Emergency Planning Committee (LEPC) ~~(LEPC) Local Emergency Planning Committee (LEPC)~~ will be notified in accordance with said section of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 355).

The Kansas Department of Health and Environment (KDHE) ~~(KDHE) Kansas Department of Health and Environment~~

~~(KDHE)~~ will be notified of incidents through reporting as specified in Section H-9.

~~H-5b Identification of Hazardous Materials: H-5b~~

~~Identification of Hazardous Materials:~~ H-5b

## Identification of Hazardous Materials:

40 CFR 264.56(b)

Whenever there is a release, fire, or explosion that may threaten human health or the environment, the ERC will immediately attempt to determine the character, exact source, amount, and areal extent of any released materials. Facility records, manifests, truck placards, etc. may be reviewed or inspected in an effort to identify the waste which may be involved in an exigent situation. A chemical analysis may be performed as necessary.

## H-5c Hazard ~~Assessment: H-5c~~ ~~Hazard Assessment: H-5c~~

~~Hazard Assessment:~~Assessment: 40 CFR 264.56(c)

The ERC will assess possible hazards to human health or the environment that may result from the release, fire or explosion. This assessment will consider both direct and indirect effects of the release, fire, or explosion, including:

?* the possible effects of any toxic, irritating, or asphyxiating gases that are generated,

?* the possibility of fire spreading to other areas or causing a heat induced explosion,

?* the risk to which facility personnel might be exposed by attempting to control a fire or release,

?* the effects of any hazardous surface water run-off from water or chemical agents used to fight fires, and

?* the potential of contaminating surface water or ground water from a spill or release of hazardous material.

The ERC will utilize available information to make this assessment, including the quantity of hazardous material involved, the rate of release, and the conditions surrounding the incident.

**H-5d Control~~Procedures:H-5d~~ ~~Control Procedures:H-5d~~ ~~Control~~ Procedures: 40 CFR 264.52(a), 264.56**

In the event of an emergency, the necessary provisions of this Contingency/Emergency plan will be carried out as described below.

The person who first discovers the incident, if it is safe to do so, will:

- ?* evacuate injured personnel,
- ?* Notify the Emergency Response Coordinator,
- ?* stop the spread of contamination (e.g., turn off a valve on a tank),
- ?* begin primary containment of liquids (i.e., dikes, sumps),
- ?* order the evacuation of other personnel from the area surrounding the incident, if necessary.

Once the ERC has been notified and is on the scene, he/she will then assess the situation further with the information that is available at this time. The ERC will immediately implement, as necessary, the following provisions of this Contingency/Emergency Plan (if not previously implemented).

- ?* Activate internal facility alarms or communication systems to notify all facility personnel of the incident.

?* Identify the character, exact source, amount, and areal extent of any released material, if possible.

?* Assess the possible hazards to human health or the environment. If the assessment indicates that there is a threat to human health or the environment outside the facility, or if there is evidence of a release of a RQ of hazardous material outside the facility, the ERC will implement the notification provisions of this Contingency/Emergency Plan per 40 CFR 264.56(d).

?* Coordinate the evacuation of personnel from immediate danger and coordinate first aid for injured personnel.

After the initial assessment is completed, the ERC will also, as necessary, implement the following procedures.

?* Coordinate the appropriate response procedures according to the incident. These procedures are presented in H-5e.

?* Initiate remedial actions to reduce the impact of the incident, as appropriate.

?* Ensure that any waste generated during clean up is properly managed, and that no waste that may be incompatible with the released material is managed at the affected unit until the cleanup procedures are completed.

Additional responses may be warranted depending on the type of incident. The response procedures outlined in H-5e include the items which the ERC will consider in determining additional responses. This Plan serves as a guide rather than an unyielding set of procedures. The ERC will consider all options presented in this Plan and implement them as appropriate.

**H-5e Emergency Response~~Procedures:H-5e Emergency Response Procedures:H-5e Emergency Response~~ Procedures: 40 CFR 264.56**

**H-5e(1) Injuries to~~Personnel:H-5e(1) Injuries to Personnel:H-5e(1) Injuries to~~ Personnel:**

The following response actions are to be considered in the event that an injury occurs at the facility.

?* Based on the assessment of hazards to health which may be present, and if it is safe to do so, evacuate injured personnel from immediate danger using appropriate Personal Protective Equipment (PPE).

?* Perform CPR or artificial respiration, if needed, on the injured.

?* Notify Sedgwick County EMS according to notification procedures in Section H-5a.

?* Wash eyes, skin, etc. of injured personnel with water, if needed.

?* Treat injuries (see Figure H.2 for the location of first aid stations).

?* Establish emergency operations center.

?* Notify emergency operations center of incoming injured.

?* Dispatch site personnel to meet and direct incoming emergency vehicles.

H-5e(2) Fires/Explosions:~~-5e(2) Fires/Explosions:H-5e(2) Fires/Explos~~

During an emergency, the ERC will take all reasonable measures necessary to ensure that fires and explosions do not occur, recur, or spread to other hazardous waste at the facility.

The following response actions are to be considered if a fire and/or explosion should occur at the facility.

?* Establish an emergency operations center.

?* Extinguish any fire with fire extinguishers, if appropriate.

?* Call the Wichita Fire Department HMRT.

?* Evacuate site according to evacuation procedures in H-8.

?* Notify Derby refinery and Union Pacific in the event of an evacuation.

?* Contact appropriate local agencies (see H-5 for notification procedures). The telephone list is posted at or near telephones or is available in office areas.

?* Notify the KDHE.

?* Notify the National Response Center (NRC).

?* Dispatch site personnel to meet and direct incoming emergency vehicles.

?* Use water spray to cool tanks and containers that are exposed to heat as a result of the fire and/or explosion.

?* Protect other operations and vehicles from the incident. This includes, where applicable, stopping processes and operations, collecting and containing released wastes, removing or isolating containers, or moving vehicles.

?* Monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment.

?* Stop the release of liquid by plugging, patching, or unloading any leaking tanks, pipes, or other equipment.

?* Absorb liquid waste with absorbent materials and place in containers for management. Alternatively, larger spills can be pumped into containers or tanks.

## H-5e(3) Releases:~~-5e(3) Releases:H-5e(3) Releases:~~

During an emergency, the ERC will take all reasonable measures necessary to ensure that releases do not occur or recur. The following list contains response procedures to be considered in the event that a release of hazardous waste occurs.

?* Evacuate immediate area around incident.

?* Attempt to contain spills, if it is safe to do so.

?* Transfer leaking or ruptured container(s) to an overpack.

?* Establish emergency operations center.

?* Determine the source of spill/release and shut down the affected unit to eliminate additional material release.

?* Stop additional release of material to the environment and control surface leakage (e.g., pump the spilled material to tanks, transfer contents of tank to another tank, build containment dikes, transfer released materials to containers).

?* Clean up the spill using on-site equipment. As appropriate, these procedures will include soaking up liquid with absorbants; removal of standing liquids and/or waste from sumps, trenches, or low points of the floor; removal of material adhering to the surface; and steam cleaning and/or a water rinse.

?* If on-site personnel cannot contain/cleanup spill, contact appropriate state and local agencies (see Section H-5a for notification procedures).

?* Contact the Wichita Fire Department Hazardous Materials Response Team (HMRT) for RQ spills. The telephone list is posted next to all phones or in all offices in the facility (see Appendix H-B for phone numbers).

?* Evacuate the facility (see H-8 for evacuation procedures and routes).

?* Within twenty-four (24) hours, or as soon as practicable after detection of the release, transfer sufficient waste from the tank or container, as necessary, to prevent further release of hazardous waste to the environment and to allow inspection of the unit. Any tank system from which there has been a leak or spill, or which is unfit for use, will be emptied and removed from service in accordance with 40 CFR 264.196.

?* After the release is controlled, and it is deemed safe to do so, response personnel will enter the affected building or area to assess damage and to determine the condition of waste containers, and other affected equipment.

?* Stop the release of liquid into an area by plugging, patching, or unloading any leaking tanks, pipes, or other equipment.

?* Stop the release of liquid from its container by placing the leaking container into an overpack drum.

After an emergency, the ERC will initiate clean-up activities including the treatment, storage, and/or disposal of recovered waste, contaminated soil or surface water, or other material that results from a release, fire, or explosion at the facility.

**H-5f Post-Emergency~~Activities:H-5f Post-Emergency Activities:H-5f Post-Emergency~~ Activities: 40 CFR 264.56(h)(2), (i)**

When operations of a waste management unit have been suspended due to an emergency resulting in implementation of this Plan, the unit and all equipment that was used in implementing the Plan will be assessed. Emergency equipment used in response to the emergency must be determined to be fit for reuse or replaced. The Regional Administrator (Region VII) and the KDHE will be notified (per 40 CFR 264.56) when the equipment is fit for use, prior to resuming operation of the affected unit.

The following actions will be considered when decontaminating emergency equipment.

?* Provide adequate safety equipment and protective clothing for ~~SKW~~CHK personnel involved in remedial actions.

?* After a fire, explosion, or spill event is controlled and it is deemed safe to do so, enter the affected building or area to assess damage and determine the condition of waste containers, tanks, and other affected equipment.

?* Utilize on-site equipment for remedial actions (see H-6 for list of on-site equipment).

?* The Tanker Bay in the Processing Area may be used to decontaminate vehicles and equipment (i.e., trucks, portable pumps, etc.). The rinsate will be collected and managed as a hazardous waste.

?* Reusable PPE will be decontaminated, as appropriate. PPE which is unsuitable for reuse will be managed for disposal.

?* Inspect the affected unit(s) and ensure that no waste that is incompatible with the released material is managed in the unit(s) until cleanup procedures are completed.

? * Note in the operating record the time, date, and details of any incident that required implementing the contingency plan.

? ~~Submit, from SKW~~* Submit, from CHK or the ERC, a written report of the incident to the Secretary within 15 days after the incident (see H-9 for the detailed reporting requirements).

? ~~Submit, from SKW~~* Submit, from CHK or the ERC, a written report to the Secretary certifying that any emergency equipment involved in the incident or in the response and remediation are fit for their intended use.

H-6 Emergency~~Equipment:H-6~~ ~~Emergency Equipment:H-6~~

~~Emergency~~ Equipment: ~~40 CFR 264.52(e)~~

Emergency equipment is available at the facility for response to emergency situations. Emergency equipment maintained on site is summarized in Table H-2, Emergency Equipment List~~H-2, Emergency EquipmentListTable H-2, Emergency Equipment List~~. This equipment will be accessible and will be regularly inspected and appropriately serviced. A description of this equipment is listed below.

H-6a Emergency Alarm and Communication Systems: ~~H-6a~~

~~Emergency Alarm and Communication Systems: H-6a~~

~~Emergency Alarm and Communication Systems:~~

The facility is equipped with emergency alarm and communication systems to be used to notify and give emergency directions to both on-site and off-site personnel. These systems include:

?* a facility-wide alarm system (siren), which is capable of alerting personnel of emergencies;

?* a PA system which includes an intercom system accessible by telephones throughout the facility; and

?* telephones, which are the primary means of communication within the facility and between the facility and the local emergency authorities.

## Table H-2

## Emergency Equipment List

| Equipment | Capabilities |
|---|---|
| Fire Extinquishers | Small fire control |
| Foam Supply | Fire control |
| Portable Sump Pump | Collection of spills/leaks |
| SCBA/Respirators | Minimize exposure of personnel |
| Personal Protective Equipment | Minimize exposure of personnel |
| Air Compressor | Supplied air line |
| Containers/Overpacks | Storage of collected material |
| Absorbants | Spill control |
| Squeegee, Shovel | Spill collection/containment |
| Portable P.A. System | Communication |

H-6b **Fire~~extinguishers:H-6b Fire extinguishers:H-6b~~ Fire extinguishers**:

There are fire extinguishers located throughout the facility as required by the appropriate local fire code as well as the National~~Fire Protection Association (NFPA)National Fire Protection Association(NFPA)National~~ Fire Protection Association (NFPA) code. The facility employs Type ABC fire extinguishers which are multipurpose combinations of the extinguisher types listed below.

?* Type A is capable of extinguishing fires involving ordinary combustible wastes such as wood, cloth, paper, rubber, and many plastics.

?* Type B is capable of extinguishing fires involving flammable liquids, oils, greases, tars, oil base paints, lacquers, and flammable gases.

?* Type C is capable of extinguishing fires involving energized electrical equipment.

In Buildings I and J, small containers of dry powder fire extinguisher will be kept on hand in any area where open containers are handled (i.e., Areas I300 and J200). In addition, Buildings I and J will be provided with a foam fire suppression system instead of the water sprinklers provided in other areas of the plant.

H-6c Fire~~hydrants:H-6c~~ ~~Fire hydrants:H-6c~~ ~~Fire~~ hydrants:

Fire hydrants are available for fire control. They receive their water supply from the City of Wichita Department of Water.

H-6d First Aid~~Stations:~~

~~H-6d First Aid Stations:H-6d First Aid~~ Stations:

Cabinets of first aid and medical supplies such as bandages, tape, antibacterial ointments, pain relievers, splints, local and topical anesthetics and eyewash bottles and solution are located throughout the facility (see Figure H.1 for first aid station locations).

H-6e ~~-6e H-6e~~ Personal~~Protective Equipment (PPE)Personal Protective Equipment (PPE)Personal~~ Protective Equipment (PPE):

The PPE listed below is available to facility personnel; PPE is issued as appropriate.

- ~~?~~* Chemically resistant garments
- ~~?~~* Chemically resistant gloves
- ~~?~~* Chemically resistant boots
- ~~? Coveralls~~
- ~~? Steel-toed boots~~
- ~~?~~* Coveralls

* Steel-toed boots
* Hard hats
* ~~?~~* Face shields and protective eyeglasses
* ~~?~~* Air purifying respirators
* Self-contained air supply (as described below)

**H-6f Safety~~Showers and Eye Wash Stations:H-6f Safety Showers and Eye Wash Stations:H-6f Safety~~ Showers and Eye Wash Stations:**

There are two (2) stations located in the facility. They are designed to meet OSHA requirements. Locations for these stations are provided on Figure H.1, Emergency Equipment/Evacuation Routes.

**H-6g ~~-6g H-6g~~ Self-Contained~~Breathing Apparatus (SCBA) Self-Contained Breathing Apparatus (SCBA) Self-Contained~~ Breathing Apparatus (SCBA):**

SCBAs are available to provide breathing air, which may be needed by some personnel in the event of an emergency situation. Supplied air will be provided in Buildings I and J.

**H-6h** Other Emergency Response~~Equipment:H-6h Other Emergency Response Equipment:H-6h Other Emergency~~ Response Equipment:

?* Portable Pumps - Pumps which handle liquids and sludges are available for recovering any released contaminants.

?* Stabilizing agents - Stabilizing materials will be stored in Building B to assist in spill release containment and cleanup.

?* Overpack drums - Overpack drums will be available in each Container Storage Building where containerized hazardous waste is stored. Leaking drums may be placed inside these overpack drums for containment.

?* Site Equipment - Mobile equipment may be used to respond to hazardous waste releases. Facility equipment typically maintained includes industrial trucks (forklifts) and a multi-purpose vehicle (Bobcat).

## H-7 Coordination~~Agreements:H-7 Coordination Agreements:H-7 Coordination~~ Agreements: 40 CFR 264.52(c), 264.37

### H-7a Emergency~~Authorities:H-7a Emergency Authorities:H-7a Emergency~~ Authorities:

Coordination agreements with local emergency authorities have been negotiated; letters to these authorities are presented in Appendix~~H-D, Coordination Agreement LettersAppendix H-D, Coordination AgreementLettersAppendix~~ H-D, Coordination Agreement Letters in compliance with 40 CFR 264.37. Copies of this plan will be submitted to the organizations identified in Appendix H-D; amendments to the plan will be forwarded to these authorities as required. Procedures for notification of emergency authorities are described in Section H-5a.

### H-7b Local~~Contractors:H-7b Local Contractors:H-7b Local~~ Contractors:

In the event that on-site cleanup of a spill or release is required, ~~SKW~~CHK has limited equipment on-site to respond. Outside contractors may be used as needed to respond to a spill or release. In addition, ~~Safety-~~Clean ~~Kleen~~Harbors has a Remedial Services Division which is capable of responding to hazardous waste spills and/or releases.

## H-8 Evacuation~~Plan:H-8 Evacuation Plan:H-8 Evacuation~~ Plan: 40 CFR 264.52(f)

In each exigent situation, the ERC will determine whether a facility evacuation is necessary to protect the health and safety of facility personnel. The following criteria will be considered in making this decision.

### H-8a Criteria for~~Evacuation:H-8a Criteria for Evacuation:H-8a Criteria for~~ Evacuation:

- ~~?~~* Fire and/or explosion which releases vapors or fumes which will endanger the health of facility personnel.

- ~~?~~* Fire and/or explosion which could ignite other hazardous wastes and, in turn, endanger facility personnel.

- ~~?~~* Spill and/or release which releases vapors or fumes which will endanger the health of facility personnel.

If the ERC determines that a site evacuation is necessary, the following procedures will be followed to implement the evacuation.

?* The ERC or person designated by the ERC shall activate the appropriate alarms/sirens indicating that a site evacuation is required. If the alarm/siren system is not functioning, the intercom system will be used.

?* All facility personnel shall meet at the appropriate evacuation point(s).

?* The ERC or person(s) designated by the ERC will perform a count of all personnel at the evacuation point(s).

?* If any persons are not accounted for, the ERC will coordinate efforts to search the appropriate areas to locate the missing personnel.

?* Personnel shall evacuate the site according to the evacuation routes shown on Figure H.1. All personnel will be informed of these procedures and routes in their initial training program.

Personnel may return to the site when allowed to do so by the ERC.

H-9 Required~~Reports:H-9 Required Reports:H-9~~ Required Reports: 40 CFR 264.56(j)

H-9a Reports to the~~Secretary:H-9a Reports to the Secretary:H-9a~~ Reports to the Secretary:

If the Contingency Plan is implemented per 40 CFR 264.51(b), ~~SKW~~CHK will submit a written report to the Secretary within 15 days after the incident in compliance with 40 CFR 264.56(j).

The report will include the following information.

~~?~~* Name, address, and telephone number of the owner or operator

~~?~~* Name, address, and telephone number of the facility

~~?~~* Date, time, and type of incident (e.g., fire, explosion)

~~?~~* Name and quantity of material(s) involved

- ?* The extent of injuries, if any
- ?* An assessment of actual or potential hazards to human health or the environment, where this is applicable
- ?* Estimated quantity and disposition of recovered material that resulted from the incident
- ?* Notification that the equipment used in response to the incident is fit for its intended use

## H-9b SARA~~Reporting:H-9b SARA Reporting:H-9b~~ SARA Reporting:

As soon as practicable after a release which requires notice under the Superfund Amendments and Reauthorization Act (SARA), ~~SKW~~CHK or the ERC will provide a written report to the LEPC as required by regulations set forth under that Act.

# Appendix H-A

## List of EPA Waste Codes

# Appendix H-B

## Emergency Response Coordinator Authorization

# Appendix H-C

## Emergency Telephone Listing of Local Authorities

# Emergency Telephone Listing of Local Authorities

~~Safety-Kleen (Wichita), Inc.~~Clean Harbors Kansas, LLC
2549 North New York Avenue
Wichita, Kansas, 67219

| ~~Agency~~ | ~~Office Telephone~~ | ~~Emergency Telephone~~ |
|---|---|---|
| Agency | Office Telephone | Emergency Telephone |
| Sedgwick Co. EMS | 316/383-7994 | 911 |
| St. Francis Emergency Center | 316/268-5052 | 316/268-5052 |
| Wichita Fire Dept. | 316/268-4451 | 911 |
| ~~WFD HazMat Team~~ | ~~316/683-7216~~ | ~~911~~ |
| WFD HazMat Team | 316/838-8655 | 911 |
| Wichita Police Dept. | 316/268-4239 | 911 |
| ~~KDHE~~ | ~~913/296-1500~~ | ~~913/296-1500~~ |
| KDHE | 785/296-1079 | 785/296-0614 |
| ~~EPA Region VII~~ | ~~913/551-7000~~ | ~~913/551-7000~~ |
| EPA Region VII | 913/281-0991 | 913/281-0991 |
| National Response Center (NRC) | 800/424-8802 | 800/424-8802 |
| ~~Derby Refinery~~<br>~~After 5:00 PM~~ | ~~316/267-0301~~ | [redacted] |

Ex. 6 PII

Ex. 6 PII

| | | |
|---|---|---|
| Derby Refinery<br>After 5:00 PM | 316/262-5703 | [redacted] |
| ~~Union Pacific~~ | ~~316/268-9424~~ | |
| Union Pacific | 316/268-9433 | |

Note: Facility Telephone Numbers:
Office: 316/269-7400
~~Beeper: 800-759-7243, enter 1288929 (Mike Green)~~
Beeper: Beeper utilized when Emergency Response Coordinators are otherwise unavailable; see Table H-1 for list of ERCs.

# Appendix H-D

## Coordination Agreement Letters

~~SAFETY-KLEEN (WICHITA)~~ Clean Harbors Kansas, LLC
**DAILY INSPECTION LOG**

FOR THE DAY OF : _______________ ______, ______ TIME: ______

| INSPECTION UNIT | PERIMETER AND YARDS | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Facility Gates | Check: should be locked, and warning signs present and visible. | A / U | |
| Access Roads | Check for facility debris, deterioration, and spills. | A / U | |
| Perimeter and Yards | Check for contaminated pallets, hoses, equipment or debris, or evidence of spills. | A / U | |

INSPECTION COMPLETED BY: ____________________________

******** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS ********

~~SAFETY-KLEEN (WICHITA)~~ **Clean Harbors Kansas, LLC**
**DAILY INSPECTION LOG**

FOR THE DAY OF :_______________ _____, ______ TIME:______

| INSPECTION UNIT | BUILDING D: | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Container Storage | Two foot minimum aisle space between piles of drums. | A / U | |
| | Loading/unloading areas: check for evidence of spills or accumulated liquids. | A / U | |
| | Sump: Check for accumulation of liquid, contaminants, or deterioration. | A / U | |
| Containment area: Inside Tank Room | Cracks or general deterioration of the concrete. | A / U | |
| | Floor coating integrity: Check for cracks, gaps, flaking, chips, gouges, or other signs of wear or leaking. | A / U | |
| | Sump: Check for accumulations of liquid, contaminants, or deterioration. | A / U | |

INSPECTION COMPLETED BY: ____________________________

******** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS ********

~~SAFETY-KLEEN (WICHITA)~~ Clean Harbors Kansas, LLC
DAILY INSPECTION LOG

FOR THE DAY OF :_______________ _____, ______ TIME:______

| INSPECTION UNIT: D BUILDING, TANKS & MISCELLANEOUS UNITS | E L E M E N T S T A T U S | | | | | |
|---|---|---|---|---|---|---|
| INSPECTION ITEM: | Leaks, Deterioration, Corrosion | Foundation Integrity | Piping Integrity | Protective Coating | Lid/Cap Closed | Pressure Relief Hatch (where appl) | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| V - 9 | A / U | A / U | A / U | A / U | A / U | A / U | |
| V - 10 | A / U | A / U | A / U | A / U | A / U | A / U | |
| V - 11 | A / U | A / U | A / U | A / U | A / U | A / U | |
| V - 12 | A / U | A / U | A / U | A / U | A / U | A / U | |
| V - 13 | A / U | A / U | A / U | A / U | A / U | A / U | |
| V - 14 | A / U | A / U | A / U | A / U | A / U | A / U | |
| V - 15A | A / U | A / U | A / U | A / U | A / U | A / U | |
| V - 15B | A / U | A / U | A / U | A / U | A / U | A / U | |
| V - 15C | A / U | A / U | A / U | A / U | A / U | A / U | |
| V - 15D | A / U | A / U | A / U | A / U | A / U | A / U | |
| V - 16 | A / U | A / U | A / U | A / U | A / U | A / U | |

INSPECTION COMPLETED BY: ______________________

******** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS ********

~~SAFETY-KLEEN (WICHITA)~~ Clean Harbors Kansas, LLC
DAILY INSPECTION LOG

FOR THE DAY OF :________________ _____, ______ TIME:______

| INSPECTION UNIT | PROCESSING AREA: | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Container Storage, Ignitable Storage, Containment | Two foot minimum aisle space between piles of drums. | A / U | |
| | Loading/unloading areas: check for evidence of spills or accumulated liquids. | A / U | |
| | Cracks or general deterioration of the concrete. | A / U | |
| | Coating integrity: check for cracks, gaps, flaking, chips, gouges, or other signs of wear. | A / U | |
| | Check for fire prevention: no smoking, use of non sparking tools, proper use of Hot Work Permits as needed. | A / U | |
| | Sump and Containment: Check for accumulations of stormwater, contaminants, or deterioration. | A / U | |
| Light Liquid Pumps | Visually check all pumps, valves, flanges, pressure relief devices, and connections for evidence of leaks. | A / U | |
| Truck Bay | Check: Evidence of spills in the containment or sump. | A / U | |
| | Check hoses for signs of wear, leakage, or other damage; hose couplings for proper seals and leaks or other damage. | A / U | |

INSPECTION COMPLETED BY: ______________________

******** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS ********

~~SAFETY-KLEEN (WICHITA)~~ Clean Harbors Kansas, LLC
**DAILY INSPECTION LOG**

FOR THE DAY OF :_______________ _____, ______ TIME:______

| INSPECTION UNIT | PROCESSING AREA: | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Tank Farm | Check containment and perimeter for wet spots. | A / U | |
| | Check for cracks or general deterioration of the concrete. | A / U | |
| | Coating integrity: check for cracks, gaps, flaking, chips, gouges, or other signs of wear. | A / U | |
| | Sumps: check for accumulations of stormwater, contaminants, or deterioration. | A / U | |

INSPECTION COMPLETED BY: ___________________________

******** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS ********

~~SAFETY-KLEEN (WICHITA)~~ Clean Harbors Kansas, LLC
DAILY INSPECTION LOG

FOR THE DAY OF :________________ _____, ______ TIME:______

| INSPECTION UNIT: FLAMMABLE TANKS | E L E M E N T S T A T U S | | | | | | |
|---|---|---|---|---|---|---|---|
| INSPECTION ITEM: | Leaks & Corrosion | Foundation Integrity | Piping Integrity | Protective Coating | Cap Closed | Pressure Relief Hatch (where appl) | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| V - 1 | A / U | A / U | A / U | A / U | A / U | N / A | |
| V - 2 | A / U | A / U | A / U | A / U | A / U | A / U | |
| V - 3 | A / U | A / U | A / U | A / U | A / U | N / A | |
| V - 4 | A / U | A / U | A / U | A / U | A / U | N / A | |
| V - 5 | A / U | A / U | A / U | A / U | A / U | A / U | |
| V - 6 | A / U | A / U | A / U | A / U | A / U | A / U | |
| V - 7 | A / U | A / U | A / U | A / U | A / U | N / A | |
| V - 8 | A / U | A / U | A / U | A / U | A / U | N / A | |
| V - 17 | A / U | A / U | A / U | A / U | A / U | N / A | |
| Misc. Units: Drum Scraper | A / U | A / U | A / U | A / U | A / U | N / A | |
| Disperser (V-26) | A / U | A / U | A / U | A / U | A / U | N / A | |
| Drum Washer | A / U | A / U | A / U | A / U | A / U | N / A | |

INSPECTION COMPLETED BY: ______________________

******** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS ********

~~SAFETY-KLEEN (WICHITA)~~ Clean Harbors Kansas, LLC
**DAILY INSPECTION LOG**

FOR THE DAY OF :________________ _____, ______ TIME:______

| INSPECTION UNIT/ AREA: H BUILDING: Operations Shack | | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Log Books | Check to ensure that log entries are made daily and the logs are kept in a designated location. | A / U | |
| | Check on the following table to ensure that tank strappings are recorded daily for each tank. | A / U | |

INSPECTION UNIT/ AREA: H BUILDING: Operations Shack

INSPECTION ITEM: Tank Strappings Log

| V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | V10 | V11 | V12 | V13 | V14 | V15A | V15B | V15C | V15D | V16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N |

INSPECTION COMPLETED BY: ____________________________

******** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS ********

~~SAFETY-KLEEN (WICHITA)~~ Clean Harbors Kansas, LLC
DAILY INSPECTION LOG

FOR THE DAY OF : ______________ _____, ______ TIME: ______

| INSPECTION UNIT | BUILDING C: | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Container Storage | Two foot minimum aisle space between piles of drums. | A / U | |
| | Check for fire prevention: no smoking, use of non sparking tools, proper use of Hot Work Permits as needed. | A / U | |
| | Loading/unloading areas: check for evidence of spills or accumulated liquids. | A / U | |
| | Floors: check for accumulations of liquids or contaminants. | A / U | |

| INSPECTION UNIT | Drum Dock: | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Container Storage | Two foot minimum aisle space between piles of drums. | A / U | |
| | Loading/unloading areas: check for evidence of spills or accumulated liquids. | A / U | |
| Waste Acceptance | Check trucks and vans in dock and in yard: incoming loads must be placed in a Container Management Unit within 72 hours of arrival. | A / U | |

INSPECTION COMPLETED BY: ____________________

******** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS ********

~~SAFETY-KLEEN (WICHITA)~~ Clean Harbors Kansas, LLC
DAILY INSPECTION LOG

FOR THE DAY OF :_______________ _____, ______ TIME:______

| INSPECTION UNIT | BUILDING B: | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Container Storage | Two foot minimum aisle space between piles of drums. | A / U | |
| | Loading/unloading areas: check for evidence of spills or accumulated liquids. | A / U | |
| | Sump: Check for accumulations of liquids, contaminants, insecure gratings, or deterioration. | A / U | |

INSPECTION COMPLETED BY: ____________________________

******** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS ********

~~SAFETY-KLEEN (WICHITA)~~ Clean Harbors Kansas, LLC
**DAILY INSPECTION LOG**

FOR THE DAY OF : ______________ _____, ______ TIME: ______

| INSPECTION UNIT | BUILDING I: | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Container Storage | Two foot minimum aisle space between piles of drums. | A / U | |
| | Loading/unloading areas: check for evidence of spills or accumulated liquids. | A / U | |
| | Floors: check for accumulations of liquids or contaminants. | A / U | |

| INSPECTION UNIT | BUILDING J: | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Container Storage | Two foot minimum aisle space between piles of drums. | A / U | |
| | Loading/unloading areas: check for evidence of spills or accumulated liquids. | A / U | |
| | Floors: check for accumulations of liquids or contaminants. | A / U | |

INSPECTION COMPLETED BY: ____________________

******** DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED REMEDIAL WORK ORDERS ********

~~SAFETY - KLEEN (WICHITA)~~ Clean Harbors Kansas, LLC
ANNUAL INSPECTION LOG

FOR THE PERIOD OF : ____________ TO ____________, ______ DATE INSPECTED: ____________ ___, TIME:____

| INSPECTION UNIT | ANNUAL INSPECTION | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Fire Hydrants | Check for adequate water supply, and leaks or evidence of corrosion. | A / U | |
| Pumps and ancillary equipment | Check for leaks in accordance with meth-od 21 referenced in 264.1063. Record in Subpart AA and BB monitoring record book. | A / U | |

INSPECTION COMPLETED BY: ____________________

************ DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS ************

~~SAFETY - KLEEN (WICHITA)~~ Cleaen Harbors Kansas, LLC
MONTHLY INSPECTION LOG

FOR THE MONTH OF :_______________ _____, ______ DATE AND TIME:______

| INSPECTION UNIT | PERIMETER AND GENERAL FACILITY | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Facility Gates | Operate and make sure the warning signs are present and visible. | A / U | |
| Fences | Check for breaks or damage. | A / U | |
| | Check for erosion under fences. | A / U | |
| Access Roads | Check for facility debris, deterioration, and spills. | A / U | |
| Perimeter and Yards | Note any evidence of stressed vegetation or vegitation obscuring signs. | A / U | |
| Loud Speakers | Check for operability and clarity. Receive confirmation of both. | A / U | |
| Telephone System, Emergency Alarm | Check for operability and verify contingency plan contact list is present. | A / U | |

| INSPECTION UNIT/ AREA: G BUILDING: Break Room and Showers | | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Emergency Equipment | Check SCBA for cleanliness, air, operability. | A / U | |
| | Check first aid kit for stock and accessibility. | A / U | |

INSPECTION COMPLETED BY: ____________________

************ DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS ************

~~SAFETY - KLEEN (WICHITA)~~ Cleaen Harbors Kansas, LLC
MONTHLY INSPECTION LOG

FOR THE MONTH OF : ______________ _____, ______ DATE AND TIME: ______

| INSPECTION UNIT | BUILDING D: | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Telephone System, Emergency Alarm | Check for operability and verify contingency plan contact list is present. | A / U | |
| Spill Control Equipment | Check inventory and availability of absorbent, shovel, broom, and drum. | A / U | |
| PPE Storage | Inspect inventory for adequate supplies and operable condition. | A / U | |
| Fire Extinguishers | Check seals and pressure. Assure that appropriate type is hanging by signs/ contingency plan. | A / U | |

INSPECTION COMPLETED BY: ____________________

************ DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS ************

~~SAFETY - KLEEN (WICHITA)~~ Cleaen Harbors Kansas, LLC
MONTHLY INSPECTION LOG

FOR THE MONTH OF :________________ _____, ______ DATE AND TIME:______

| INSPECTION UNIT | PROCESSING AREA: | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Light Liquid Pumps | Visually check all pumps, valves, flanges, pressure relief devices, and connections for evidence of leaks. | A / U | |
| | Check that monthly AA BB monitoring has been performed and recorded. | A / U | |
| Spill Control Equipment | Check for inventory and availability of absorbent, shovel, broom, and drum. | A / U | |
| Emergency Equipment | Check for cleanliness, proper location of contingency plan equipment, and operability of eyewash and shower stations. | A / U | |
| Fire Extinguishers | Check for seals and pressure. Assure that correct type is hanging by signs/ contingency plan. | A / U | |
| Warning Signs | Check that No Smoking Signs are visible on all four sides of the Processing building. | A / U | |
| Fire Suppression System | Check for deterioration. | A / U | |

INSPECTION COMPLETED BY: ____________________

************ DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS ************

~~SAFETY - KLEEN (WICHITA)~~ Cleaen Harbors Kansas, LLC
MONTHLY INSPECTION LOG

FOR THE MONTH OF : ______________ _____, ______ DATE AND TIME: ______

| INSPECTION UNIT/ AREA: H BUILDING: Operations Shack | | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Emergency Equipment | Check for stock and accessibility of First Aid kit. | A / U | |
| Fire Extinguisher | Check for seals and pressure. Assure that correct type is hanging by signs/ contingency plan. | A / U | |
| Telephone System, Emergency Alarm | Check for operability and verify contingency plan contact list are present. | A / U | |

| INSPECTION UNIT | BUILDING C: | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Spill Control Equipment | Check for inventory and availability of absorbent, shovel, broom, and drum. | A / U | |
| Fire Extinguishers | Check for seals and pressure. Assure that correct type is hanging by signs per contingency plan. | A / U | |
| Telephone System, Emergency Alarm | Check for operability and verify Contingency Plan Contact List is present. | A / U | |
| Fire Suppression System | Check pressure gauges: water approx. 100PSI, air approx. 40-45PSI. | A / U | |

| INSPECTION UNIT | Drum Dock: | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Telephone System, Emergency Alarm | Check for operability and verify contingency plan contact list is present. | A / U | |

INSPECTION COMPLETED BY: ____________________

************ DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS ************

~~SAFETY - KLEEN (WICHITA)~~ Cleaen Harbors Kansas, LLC
MONTHLY INSPECTION LOG

FOR THE MONTH OF :_______________ _____, ______ DATE AND TIME:______

| | | | |
|---|---|---|---|
| INSPECTION UNIT | WEST YARD | | |
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Facility Gates | Check: should be locked, and warning signs present and visible. | A / U | |
| Access Roads | Check for facility debris, deterioration, and spills. | A / U | |
| Fences | Check for breaks or damage. | A / U | |
| | Check for erosion under fences. | A / U | |
| Perimeter and Yards | Note any evidence of stressed vegetation. | A / U | |
| INSPECTION UNIT | BUILDING B: | | |
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Spill Control Equipment | Check for inventory of absorbent, soda ash, shovel, broom, and poly drum. | A / U | |
| Telephone System, Emergency Alarm | Check for operability and verify contingency plan contact list is present. | A / U | |
| Fire Extinguishers | Check seal and pressure. Assure appropriate type is hanging by sign/ contingency plan. | A / U | |
| INSPECTION UNIT/ AREA: A BUILDING: Laboratory | | | |
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Emergency equipment | Check eyewash and shower stations for cleanliness, and accessibility. | A / U | |
| Fire Extinguishers | Check seal and pressure. Assure appropriate type is hanging by sign/ contingency plan. | A / U | |

INSPECTION COMPLETED BY: ________________________

************ DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS ************

~~SAFETY - KLEEN (WICHITA)~~ Cleaen Harbors Kansas, LLC
**MONTHLY INSPECTION LOG**

FOR THE MONTH OF : ______________ _____, ______ DATE AND TIME: ______

| INSPECTION UNIT | WEST YARD | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Telephone System, Emergency Alarm | Check for operability and verify contingency plan contact list is present. | A / U | |
| INSPECTION UNIT | BUILDING I | | |
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Gates & Doors | Operate and make sure the warning signs are present and visible. Gates and doors should be locked unless in use. | A / U | |
| Fire Extinguishers | Check seal and pressure. Assure appropriate type is hanging by sign/ contingency plan. | A / U | |
| Access Roads and Yards | Check for facility debris, deterioration, and spills. | A / U | |

| INSPECTION UNIT | BUILDING J | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Gates & Doors | Operate and make sure the warning signs are present and visible. Gates and doors should be locked unless in use. | A / U | |
| Fire Extinguishers | Check seal and pressure. Assure appropriate type is hanging by sign/ contingency plan. | A / U | |
| Access Roads and Yards | Check for facility debris, deterioration, and spills. | A / U | |

INSPECTION COMPLETED BY: ______________________

************ DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS ************

~~SAFETY - KLEEN (WICHITA)~~ Clean Harbors Kansas, LLC
**QUARTERLY INSPECTION LOG**

FOR THE PERIOD OF : ________________ TO ______________, ______ DATE INSPECTED: _______________ ___, TIME:____

| INSPECTION UNIT | BUILDING D AND PROCESSING TANKS | | |
|---|---|---|---|
| INSPECTION ITEM | ELEMENT | STATUS | OBSERVATION/ REMEDIAL WORK ORDERS ISSUED |
| Overfill control system | Manually check operability of relief/ detection valves. Record results on the following table. | A / U | |

| INSPECTION UNIT: Tanks | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INSPECTION ITEM: Tank relief/detection valves | | | | | | | | | | | | | | | | | | |
| V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | V10 | V11 | V12 | V13 | V14 | V15A | V15B | V15C | V15D | V16 |
| A/U | A/U | A/U | A/U | A/U | A/U | A/U | A/U | A/U | A/U | A/U | A/U | A/U | A/U | A/U | A/U | A/U | A/U | A/U |

INSPECTION COMPLETED BY: ____________________________

************ DEFICIENCIES AND CORRECTIONS ARE DETAILED IN THE REFERENCED WORK ORDERS ************

## Table of Contents

## List of Appendices



## List of Acronyms

~~Safety-Kleen (Wichita), Inc. (SKW)~~Clean Harbors Kansas, LLC (CHK)
Health, Safety and Training Manager (HSTM)
Material Safety Data Sheets (MSDS)

## I-1 Outline of Training Program: 40 CFR 270.14(b)(12) and 270.16

This training program has been developed in accordance with the regulatory requirements of 40 CFR Parts 270 and 264. The program is designed to provide the information needed by ~~Safety-Kleen (Wichita), Inc. (SKW)~~Clean Harbors Kansas, LLC(CHK) personnel to assist them in understanding the processes and materials with which they are working and the potential safety and health hazards associated with those processes and materials. The training program also facilitates instruction of facility personnel in the proper procedures for preventing and reacting effectively to emergency situations. Where appropriate, the training program provides information regarding inspection, repair, and replacement of facility emergency equipment.

The goal of the training program is to train personnel to perform their job functions in an efficient and safe manner, and in compliance with applicable regulations and permit requirements.

### I-1a Job Titles and Duties: 40 CFR 264.16(d)(1), (2) and (3)

As required in 40 CFR 264.16, records at the facility will include:

- the job titles for positions at the facility related to hazardous waste management,
- the names of the employees filling these jobs,
- a description of these jobs including duties, and
- a description of the minimum qualifications for employees filling these jobs.

The following are job titles that are most relevant to the compliant operation of ~~SKW~~CHK

- Facility Manager
- Operations Manager
- Facility Engineer
- Laboratory Manager/Senior Chemist
- Laboratory Technician
- Facility Inspector
- Health, Safety and Training Manager
- Operator
- Operator Helper
- Secretary/clerk

Examples of typical job descriptions are contained in Appendix I-A, Typical Job Descriptions, Duties, and Training. These job descriptions include a summary of the duties, qualifications, and training for the job titles listed above.

I-1b Training Content, Frequency and Techniques: 40 CFR 264.16(a)(3), 264.16(c) and 264.16(d)(3)

Initial training of facility employees will consist of:

- 24 hours of safety training as described by 29 CFR 1910.120(p)(7), for operations personnel,
- an introductory training seminar, and
- job specific training.

Each employee must complete the introductory training seminar prior to working without direct supervision in any hazardous waste management area at the facility. The introductory training seminar will last approximately sixteen (16) hours. The topics covered during this seminar include facility specific items such as the Contingency/Emergency Plan, as well as basic training in general topics such as chemistry and occupational safety. An outline of the seminar is provided in Appendix I-B, Introductory Training Seminar Outline. After completion of the introductory training seminar, the employees will be tested to evaluate their comprehension of the information presented. An example of the type of test employees may be given is provided in Appendix I-C, Example Introductory Training Seminar Test.

In addition to the introductory training seminar, employees will be provided with job-specific training such as on-the-job training. The type and content of the job-specific training will depend on the skills and level of expertise demanded by the job. Appendix I-D, Typical Job-Specific Training Topics includes a list of typical topics for job-specific training that will be provided to the appropriate employees. The job-specific training completes the employee's initial training. Employees will not be allowed to perform unsupervised, hazardous waste management duties prior to completion of initial training.

Continuing training will be provided for employees performing certain jobs after the employee completes the initial training. At a minimum, the continuing training will consist of an annual review of the introductory training seminar.

Training techniques will vary depending on the subject. Typically, training techniques may involve classroom lecture, on-the-job, and audio/visual demonstration. Training instructors will include personnel who have experience and/or training in that area and outside instructors such as manufacturer's representatives. On-the-job training is conducted by qualified facility personnel.

I-1c Director of the Training Program: 40 CFR 264.16(a)(2)

The Health, Safety and Training Manager (HSTM) will administer the training program. The duties and qualifications of the HSTM are provided in Appendix I-A. The duties of the HSTM include maintaining records which demonstrate that personnel are receiving the appropriate training in accordance with the training program. The minimum qualifications for the HSTM will be a college degree and/or equivalent experience with a knowledge of regulatory and safety requirements. The HSTM will be trained in hazardous waste management procedures.

I-1d Relevance of Training to Job Position: 40 CFR 264.16(a)(2)

It is important that employees be trained and possess a knowledge of the concepts required to perform their duties. Each employee engaged in hazardous waste management activities must be able to act correctly and safely while fulfilling job responsibilities.

In addition to the introductory training seminar which all employees will attend, relevant job-specific training will be provided to appropriate employees. For example, if an employee is in a supervisory or management position requiring an understanding of the Kansas rules for the management of hazardous waste, then the employee is trained accordingly. The job descriptions contained in Appendix I-A include examples of job-specific training which are relevant to the position. Appendix I-D contains outlines of typical topics for job-specific training.

I-1e Training for Emergency Action/Response: 40 CFR 264.16(a)(3)

The introductory training seminar includes training on the Contingency/Emergency Plan. Emergency action procedures are included in the Contingency/Emergency Plan. In accordance with 29 CFR 1910.120(p)(8) and ~~SKW's~~CHK's Contingency/Emergency Plan, the facility may evacuate employees in the event of an emergency, and may not have a specially trained Emergency Response Team. The training topics provided during the seminar regarding the Contingency/Emergency Plan are provided in Appendix I-B. The seminar is designed to train employees to act appropriately during emergency situations.

In addition to the introductory training seminar, appropriate employees will receive job-specific training on emergency procedures, equipment, and systems. Where applicable, this job-specific training will include:

- waste identification;
- waste processing procedures;
- instruction on machinery operation;
- procedures for the shutdown of operations;
- instruction on safety equipment;
- procedures for using, inspecting, repairing, and replacing facility emergency equipment;
- procedures for using the communications or alarm systems;
- procedures for fires or explosions; and
- procedures for incidents of potential soil or ground-water contamination.

## I-2 Implementation of Training Program: 40 CFR 264.16(b), 264.16(d)(4) and 264.16(e)

The HSTM will monitor the training program to ensure that all employees complete their initial training and an annual review of the introductory training seminar. The initial training must be completed within six (6) months of either:

- initial employment,
- assignment to ~~SKW~~CHK if the individual is employed by ~~Safety-Kleen~~Clean Harbors at the time of the assignment (unless equivalent training was received in his/her previous assignment), or
- transfer to a new position within the facility, if the employee has not previously received the appropriate training.

In the last two (2) cases, the employee will only be required to receive instruction in those portions of the initial training for which the employee has not yet been trained. For example, an employee who transfers from one position to another within ~~SKW~~CHK will not be required to repeat the introductory training seminar or any job-specific training the employee has already completed.

Records of the training provided to employees as part of the training program will be maintained at the facility. These training records will include:

- date of training,
- training topics,
- instructor's name,
- employees in attendance, and
- any test results, if appropriate.

Training records for current employees will be maintained until closure of the facility. Training records for former employees will be maintained for at least three (3) years from the date the employee last worked at the facility. Employee training records may accompany personnel transferred to ~~SKW~~CHK from another facility operated by ~~Safety-Kleen.~~Clean Harbors.

APPENDIX I-A

TYPICAL JOB DESCRIPTIONS, DUTIES AND TRAINING

JOB TITLE: Facility Manager

| | |
|---|---|
| JOB DESCRIPTION AND DUTIES: | Responsible for the safe and efficient management of operations at the facility. Approves the development of all records and manuals at the facility. Responsible for the enforcement of facility safety programs. Coordinates all facility operations with corporate office. |
| QUALIFICATIONS: | College degree and substantial experience in hazardous waste management. Knowledge of State and Federal Regulations dealing with hazardous waste management. |
| TRAINING: | Introductory training seminar, safety training, technical training, hazardous waste management training. |

JOB TITLE: Operations Manager

| | |
|---|---|
| JOB DESCRIPTION AND DUTIES: | Responsible for the management of facility operations. Coordinates all material handling operations in the facility. Responsible for the enforcement of all safety programs. Assists in formulating all records and manuals at the facility. Assumes management of the facility as required. |
| QUALIFICATIONS: | College degree and/or experience in hazardous waste management operations including regulations. |
| TRAINING: | Introductory training seminar, operations training, safety training, technical training, hazardous waste management training. |

JOB TITLE: Facility Engineer

| | |
|---|---|
| JOB DESCRIPTION AND DUTIES: | Responsible for engineering activities at the facility. Provides engineering support on special projects at the facility. Performs engineering analyses as required to optimize facility operations. |
| QUALIFICATIONS: | Degree in engineering and experience in hazardous waste management. |
| TRAINING: | Introductory training seminar, safety training. |

JOB TITLE: Laboratory Manager/Senior Chemist

JOB DESCRIPTION AND DUTIES: Responsible for the routine operation of the laboratory including organizing and maintaining all laboratory records. Supervises technical employees to insure that all analyses are performed correctly and in a timely manner. Responsible for the analysis of incoming waste samples and designating the appropriate treatment and disposal for them. Participates in environmental monitoring as needed.

QUALIFICATIONS: Degree in Chemistry or Physical Science which included a minimum of sixteen (16) hours of chemistry. A knowledge of chemistry and general laboratory experience such as would be acquired by four (4) years of academic study in the field of chemistry supplemented by at least three (3) years experience performing hands-on analytical laboratory chemistry work.

TRAINING: Introductory training seminar, safety training, technical training, hazardous waste management training.

JOB TITLE: Laboratory Technician

JOB DESCRIPTION AND DUTIES: Responsible for the routine operation of the laboratory under the direction of the Senior Chemist. Performs analysis on pre-shipment samples. Assists in determining the designation of treatment and disposal of customer waste. Responsible for assisting in maintaining all laboratory records and inventory. Responsible for the collection and analysis of environmental samples.

QUALIFICATIONS: Two (2) years college including a minimum of thirteen (13) college credit hours of chemistry plus other science related courses or a minimum of two (2) years laboratory experience.

TRAINING: Introductory Training, First Aid and CPR, Continued Safety Training, Technical Training.

JOB TITLE: Facility Inspector

| | |
|---|---|
| JOB DESCRIPTION AND DUTIES: | Responsible for the timely and effective completion of all facility inspections. Maintains tank gauging records and all other regulatory inspection records for the facility. |
| QUALIFICATIONS: | One (1) year's experience in hazardous waste disposal operations. |
| TRAINING: | Introductory training seminar, operations training, safety training. |

JOB TITLE: Health, Safety and Training Manager

JOB DESCRIPTION AND DUTIES: Formulates and implements facility Health and Safety Programs. Ensures that personal protection equipment is available for facility employees. Responsible for routine inspections of facility safety equipment. Responsible for the formulation of the facility Training Program. Responsible for keeping records of Health, Safety, and Training Programs which demonstrate compliance with Federal and State regulations.

QUALIFICATIONS: College degree and/or equivalent experience working with State and Federal regulations, including OSHA regulations.

TRAINING: Introductory training seminar, operations training, safety training, technical training, hazardous waste management training.

JOB TITLE: Operator

| | |
|---|---|
| JOB DESCRIPTION AND DUTIES: | Responsible for the assignment and effective completion of all field activities during a shift. Coordinates operations with area supervisors. Assists in the enforcement of company policy and safety regulations. |
| QUALIFICATIONS: | A minimum of one (1) year experience in industrial waste operation, including a basic chemistry knowledge. |
| TRAINING: | Introductory training seminar, operations training, safety training. |

JOB TITLE: Operator Helper

JOB DESCRIPTION AND DUTIES: Responsible for the effective and safe completion of all assigned facility operations under the direction of the Operations Manager and/or Operator.

QUALIFICATIONS: Equipment/process experience preferred.

TRAINING: Introductory training seminar, operations training, safety training.

JOB TITLE: Secretary/clerk

| | |
|---|---|
| JOB DESCRIPTION AND DUTIES: | Responsible for administrative support activities such as typing, answering the phone, filing and recordkeeping. |
| QUALIFICATIONS: | High school diploma or equivalent with office experience. |
| TRAINING: | Introductory training seminar. |

# APPENDIX I-B

## INTRODUCTORY-TRAINING SEMINAR OUTLINE

## INTRODUCTORY-TRAINING SEMINAR OUTLINE

I. ORIENTATION: (2 hours)

1. Introduction
2. New Employee Communication Checklist
3. Company History
4. Facility Tour

II. REVIEW OF OPERATIONS: (4 hours)

1. General Facility Description
2. Contingency Plan
   - Contingency plan implementation procedures
   - Access and use of communication and alarm systems
   - Response to fires, explosions, spills and/or releases
   - Site evacuation procedures

III. CHEMICAL TRAINING: (2 hours)

Basic understanding of the characteristics of acids, caustics, and solvents

1. Basic Chemistry
2. Incompatible Wastes

IV. SAFETY TRAINING: (4 hours)

Facility safety requirements and emergency equipment including location and capabilities

1. Facility Housekeeping
2. Job Specific Safety Equipment
3. Eye & Face Safety
   - Equipment location, inspection, repair and operation

4. Respiratory Protection
   - Equipment location, inspection, repair and operation
5. Emergency Equipment
   - Equipment location, inspection, repair and operation

V. INTRODUCTORY JOB-SPECIFIC TRAINING: (RCRA) (4 hours)

1. Office Procedures - (Clerical & Technical Personnel)
   - Telecommunication System
   - Load Arrival Procedures
   - Filing System
   - Log Maintenance

2. Technical Training - (Laboratory and Supervisory Personnel)
   - Office Procedures
   - Load Arrival Procedures
   - Truck Sampling Procedures

3. Operational Training - (Operations Personnel)
   - Review Job Description
   - Truck Unloading Procedures
   - Equipment Operation

VI. ~~SAFETY-KLEEN~~Clean Harbors INITIAL TRAINING TEST: (RCRA) (30 minutes)
See Appendix I-C for example test

APPENDIX I-C

EXAMPLE INTRODUCTORY TRAINING SEMINAR TEST

## EXAMPLE INTRODUCTORY TRAINING SEMINAR TEST

1) What safety gear is required for general facility activities?

2) Who is responsible for facility housekeeping and why?

3) When and where should you wear eye protection?

4) When is it necessary to wear a face shield?

5) What areas are designated for "SMOKING"?

6) How do you gain access to the loud speaker system?

7) What is the "EMERGENCY NOTIFICATION LIST"?

8) Where are the "EYEWASH STATIONS" in your work area and how do they operate?

9) When and why should you have respiratory protection?

10) What are some of the dangers associated with acids?

11) Can "fumes" be dangerous to your health?

12) What is a Contingency Plan and where is it located?

13) What are the two kinds of "EMERGENCY ALARMS"?

14) What is the proper procedure for reporting a fire?

15) Where are the gathering points in case of an evacuation?

16) Name the location of a fire extinguisher in your work area?

17) What is the "BUDDY SYSTEM" and why is it used?

18) What is the best defense against injury?

# APPENDIX I-D

# TYPICAL JOB-SPECIFIC TRAINING TOPICS

## TYPICAL JOB-SPECIFIC TRAINING TOPICS

**OPERATIONS TRAINING:**

- Site Security
  - Security procedures and equipment
- Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment
- Preparedness and Prevention
  - Access to and use of internal communications and alarm systems
  - Access to and use of telephone for summoning off-site help
  - Access to and use of portable fire extinguishers, spill control equipment, and decontamination equipment
  - Access to and use of firewater system
  - Shut down of operations
- Contingency/Emergency Plan
  - Contingency/Emergency Plan implementation procedures
  - Access and use of communications and alarm systems
  - Response to fires, explosions, spills, groundwater contamination, and air emissions
  - Site evacuation procedures
  - Job-specific use and maintenance of emergency equipment
- Hazard Communication Manual
  - Right-to-Know
  - Material Safety Data Sheets (MSDS)
- Tank Operation and Controls
  - Site procedures and 40 CFR Part 264, Subpart J
- Use and Management of Containers
  - Site procedures and 40 CFR Part 264, Subpart I

**SAFETY TRAINING:**

- Industrial Hygiene and Decontamination Procedures and policies for decontamination
- Protective Equipment
  - Job-specific Protective Equipment
- First Aid - General Information
  - Wound and burn management
- Care in Handling Waste
  - Procedures for safety in handling and treating wastes
- Loading and Unloading of Trucks
  - Site procedures for trucks
- Specialized Equipment Operation
  - Procedures for operation and maintenance of heavy equipment
- Basic Chemistry
  - Safety in handling chemicals

TECHNICAL TRAINING:

- Updating of Waste Stream Approvals
  - Customer profile updates
- Manifest Systems
  - Proper manifest preparation
- Records
  - Site-specific records system
- Sampling and Approval Procedures
  - Procedure for sampling trucks properly and waste stream approval
- Waste Identification and Segregation
  - Procedures for identifying and handling incompatible materials

HAZARDOUS WASTE MANAGEMENT TRAINING

- Overview of RCRA hazardous waste management regulations
- Proper characterization and identification of hazardous wastes
- Land Disposal Restrictions
- Overview of DOT hazardous waste management regulations